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NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

ANALYSIS OF MINORITY OFFICER RECRUITING IN THE U.S. MARINE CORPS

by

Michael R. Sandstrom

March 2011

Thesis Co-Advisors: Mark J. Eitelberg
Stephen L. Mehay

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Marine Corps Recruiting Command administers minority officer recruiting, the brunt of which is the responsibility of Officer Selection Officers. Currently, minority officer accessions fail to reflect the demographic composition of the nation's college market. To increase minority rates, MCRC must align minority officer applicant submission goals with the population of eligible, test-score-qualified, male, baccalaureate-degree- seeking students. The purpose of this thesis is to analyze whether current minority applicant submission goals are reasonably allocated. The first phase develops a propensity-weighted Qualified Candidate Population (PW-QCP) model to provide college market estimates. Phase 2 compares these PW-QCP estimates with five-year minority officer applicant trends and minority submission goals. The third phase builds a probit model to predict the probability of accession based on applicant characteristics. The results show that submission goals should be modified to reflect the changing demographics of the nation and that the probability of minority accession is dependent on qualification characteristics that exceed those of the average applicant. The findings suggest that increasing minority representation depends on: (1) submission goals that align approximately with PW-QCP estimates; (2) submission goals that are met by Marine Corps Districts; and (3) minority applicants who can meet or exceed average eligibility requirements.

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ANALYSIS OF MINORITY OFFICER RECRUITING IN THE U.S. MARINE CORPS

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Submitted in partial fulfillment of the
requirements for the degree of

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from the

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LIST OF ACRONYMS AND ABBREVIATIONS

ACT	American College Test
CM	College Market
CNA	Center for Naval Analyses
DEOCS	Defense Equal Opportunity Climate Survey
DEOMI	Defense Equal Opportunity Management Institute
DHRA	Defense Human Resources Activity
DMDC	Defense Manpower Data Center
DOD	Department of Defense
DOE	Department of Education
GPA	Grade Point Average
IPEDS	Integrated Post-Secondary Education Data System
JAMRS	Joint Advertising and Marketing Research Service
MCD	Marine Corps District
MCRC	Marine Corps Recruiting Command
MCRISS	Marine Corps Recruiting Information Support System
MCTFS	Marine Corps Total Force System
MLDC	Military Leadership Diversity Commission
MOS	Minority Officer Study
NCES	National Center for Education Statistics
NROTC	Naval Reserve Officer Training Corps
OCC	Officer Candidate Course
OCS	Officer Candidate School
OSO	Officer Selection Officer
OSS	Officer Selection Station
PLC	Platoon Leaders Course
PW-QCP	Propensity-Weighted Qualified Candidate Population
QCP	Qualified Candidate Population
ROTC	Reserve Officer Training Corps
SAT	Scholastic Aptitude Test
TBS	The Basic School

TFDW	Total Force Database Warehouse
USNA	United States Naval Academy
YATS	Youth Attitude Tracking Study
YP	Youth Poll

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I. INTRODUCTION

> It makes sense to focus on places where space is ample and inexpensive, where candidates are most inclined to sign up and pursue a career in uniform. But there is a risk over time of developing a cadre of military leaders that politically, culturally, and geographically have less and less in common with the people they have sworn to defend. —Robert M. Gates, Secretary of Defense[1]

The U.S. military is an organization that serves as a model for racial integration and ethnic diversity, and the Department of Defense desires that the military reflect the demographic diversity of the nation.[2] The Marine Corps acknowledges that reflecting the society it represents is a key element in meeting the nation's security challenges and strives to achieve racial/ethnic diversity.[3] This is a difficult mission, given validated application standards and the limited population that meets Marine Corps commissioning requirements.

Within the civilian post-college job market, the Marine Corps competes primarily with the Army, Navy, and Air Force for its smaller, annual share of newly commissioned officers. Each service is seeking to recruit from the same, limited pool of highly qualified prospects who can reflect the nation's racial/ethnic diversity. The Marine Corps has succeeded in meeting its own minority officer goals, even as the number of required officers has decreased over time.[4] However, minority officer goals currently fail to represent the racial/ethnic composition of the nation's college market, primarily among Black officer accessions. These continuing issues call for further evaluation of the target

[1] Robert M. Gates, Secretary of Defense, "All-Volunteer Force" (lecture, Duke University, Durham, NC, 29 Sep 2010). Accessed 10 Dec 2010 from http://www.defense.gov/speeches/speech.aspx.

[2] Military Leadership Diversity Commission, "From Representation to Inclusion: Diversity Leadership for the 21st-Century Military. Final Report of the Military Leadership Diversity Commission." Jan 2011. Accessed 9 Mar 2011 from http://mldc.whs.mil/index.php/draft-final-report.

[3] General James T. Conway, "Commandant of the Marine Corps Diversity Policy." Accessed 30 Nov 2010 from http://www.deomi.org/DiversityMgmt/documents/USMCDiversityPolicy.pdf.

[4] James North and Karen Smith, CNA Research Memorandum 93–81, *Officer Accession Characteristics and Success at Officer Candidates School, Commissioning, and The Basic School*. Undated.

population, including its qualifications and availability, so that Marine Corps Recruiting Command (MCRC) can more effectively identify, reach, and recruit minority officer candidates.[5]

Annually, MCRC's Officer Selection Officers (OSOs) identify over 14,000 potentially-interested prospects. They then sift through more than 4,000 applications to find some 1,100 officer candidates who are further evaluated at Officer Candidates School (OCS), resulting in the commissioning of over 68 percent of all officer accessions.[6] The individuals who complete this process, from application to accession, comprise America's college-graduated youth who prove, through individual merit, that they can meet the rigorous standards of Marine commissioning.

To meet this human capital mission, MCRC must align officer applicant submission goals with information on the eligible applicant population currently enrolled in college. The OSOs throughout the six Marine Corps Districts (MCDs) are given officer candidate missions, to include minority submission goals, based on institution-level data on college enrollment, average enrollment aptitude test scores, area demographics and graduation estimates. The relevant applicant pool of test-score-qualified, male, baccalaureate-degree-seeking students make up the Qualified Candidate Population (QCP) that MCRC uses to allocate mission goals to MCDs and OSOs. These estimates form the foundation upon which OSOs begin their search for applicants; this is also the first step toward a racially and ethnically diverse officer corps.

A. PURPOSE

The purpose of this study is threefold: to develop a model that estimates the QCP of the college market, including data on propensity to serve in the military, at the Officer

[5] MLDC, Final Report.

[6] U.S. Marine Corps, "Officer Commissioning Options," Marine Corps Recruiting Command. Accessed 14 Nov 2010 from http://officer.marines.com/marine/making_marine_officers/commissioning_programs.

Selection Station (OSS) level; to evaluate historic minority officer application and accession trends; and to analyze whether current mission goals and minority submission goals are reasonably allocated to OSOs.

This research examines whether refinements to the QCP can improve current methods used in allocating minority officer mission goals to MCDs and OSOs. The basic premise is that, by adding information on a population subgroup's propensity to join the military, the Marine Corps should be able to more effectively manage officer recruiting of racial/ethnic minorities.[7]

More specifically, this thesis seeks to answer the following questions:

(1) Based on this study's model of Propensity-Weighted QCP (PW-QCP), what minority submission goals by MCD are reasonably achievable?

(2) Do current OSO practices based on officer applicant characteristics produce minority accessions comparable to MCD minority submission goals and PW-QCP estimates?

(3) Using probit regression analysis, what is the probability of accession based on characteristics from MCRC's five-year applicant production?

B. SCOPE AND METHODOLOGY

The present study covers three distinct areas in three phases. The first phase evaluates institutional-level demographics of the college population (limited to male college students by race/ethnicity) to determine, expand on, and validate previous CNA studies of QCP. The second phase examines the characteristics of minority officer applicants and accessions (fiscal years 2006 through 2010) to evaluate OSO production in finding qualified prospects. The final phase uses a probit model based on characteristics of the applicant population over the past five years to predict the probability of accession.

[7] Anton Jareb and Laura Parker, *Marine Corps Officer Recruiting Structure Study*, Alexandria, VA: Center for Naval Analyses, 2001; and Laura J. Kelley, *Update of Marine Corps Officer Recruiting Structure Study*. Alexandria, VA: Center for Naval Analyses, 2005.

A step-by-step methodological approach was used for research evaluation and analysis. This included a review of previous QCP studies and theories, college demographic studies, and historic Marine Corps officer recruiting practices and goals. Data for the PW-QCP model were collected in three phases. First, information on college enrollment, average enrollment test scores, student population demographics, and graduation rates was collected from the College Board via the Integrated Postsecondary Education Data System (IPEDS). Second, data on the propensity of young adults to serve in the officer corps were collected through the Minority Officer Study (MOS) conducted by the Joint Advertising Marketing Research System (JAMRS). Then, five-year production of applicant-to-accession information was gathered and merged from the Marine Corps Recruiting Information Support System (MCRISS) and the Marine Corps Total Force System (MCTFS).

For the second and third phases, data on Marine officer applicants during fiscal years 2006 through 2010 were collected through MCRISS and then merged with corresponding data on active duty officer accessions over the same period from MCTFS. The merged MCRISS/MCTFS officer candidate data are used in Phase 2 to analyze the current recruiting applicant and accession production strategies by MCRC and to validate the QCP used in this study. The data set is again used in Phase 3 for a multivariate statistical analysis to estimate the probability of accession at the OSO level. The results of the analysis are then examined to determine if MCRC-allocated minority applicant submission goals and this model's QCP estimates are valid predictors of Marine Corps officer accessions.

C. ORGANIZATION OF STUDY

Chapter II looks at the QCP models used by the Marine Corps and previous studies of minority recruiting. Chapter III describes the data used throughout the thesis, including background, sources, summary statistics, and the methodology employed in refining the minority allocation model. Chapter IV follows with a preliminary analysis of

the data, and a detailed review of results from the PW-QCP and probit models. Lastly, Chapter V presents the conclusions of the study and offers recommendations for further research.

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II. BACKGROUND AND LITERATURE REVIEW

This chapter provides the reader with background information and a review of literature relevant to this study. First, Department of Defense (DoD) officer accession strategies and Marine Corps commissioning sources are summarized with respect to the Qualified Candidate Population (QCP). The chapter then discusses the role of Officer Selection Officers (OSOs) in achieving source and submission goals. This is followed by a review of trends in MCRC minority officer production. A review of previous research is then presented to provide a foundation for understanding the approach employed in the present study.

A. BACKGROUND

1. Department of Defense Officer Accession Strategies

Each branch of the armed forces competes annually for a share of the eligible population to apply for officer commissioning, and each service has similar programs through which candidates can gain entry. The four primary sources are service academies, Reserve Officer Training Corps (ROTC), Officer Candidate School (OCS) or Officer Training School (OTS), and Other (which include direct commissions and enlisted-to-officer programs).

As Table 1 shows, the majority of Army, Navy and Air Force accessions come from the ROTC program. Among the services, the Marine Corps' commissioning strategy is unique in that the majority of accessions are recruited through college market sources rather than through service-run ROTC or Academy programs. Additionally, accessions from the U.S. Naval Academy (USNA) and Naval ROTC (NROTC) are limited with respect to the number of individuals who can select a Marine option upon graduation (up to 16.66 percent of each graduating USNA and NROTC class).[8] This results in over 60 percent of all Marine officer accessions coming from candidates who

[8]U.S. Marine Corps (1989), Military Personnel Procurement Manual, Volume 3, Officer Procurement. Washington, DC: Headquarters, Marine Corps (hereafter referred as MCO P1100.73 MPPM OFFPROC).

are individually recruited and screened by the 71 OSOs, as compared with the other Services, which place heavier emphasis on ROTC programs to screen candidates and achieve their officer accession goals.

Table 1. Number and Percentage Distribution of Active Component Accessions by Source and Service, FY 2008

Service	Accession Source					
	Academy	ROTC	OCS/OTS	Other	Unknown	Total
Army						
Number	1,118	3,324	1,981	1,443	16	7,882
Percent	14	42	25	18	1	100
Navy[a]						
Number	886	736	808	905	961	4,296
Percent	21	17	19	21	22	100
Air Force						
Number	1,103	1,517	548	1,002	8	4,178
Percent	26	36	13	24	1	100
Marine Corps[b]						
Number	249	42	1,329	46	277	1,943
Percent	13	2	69	2	14	100

Source: US Department of Defense, *Population Representation in the Military Services, FY200* (Washington, DC: Officer of the Under Secretary of Defense for Personnel and Readiness, 2010).

[a] Due to differences in data source codes at DMDC, both "ROTC" and "Unknown" categories of USN data includes Naval ROTC accessions, which for the Navy was 39% in 2008.

[b] NROTC Marine Option candidates are stored under "Unknown" for Marine data.

The Marine Corps taps into the college market primarily with two officer accession programs, the Officer Candidate Class (OCC) and the Platoon Leaders Class (PLC). As Table 2 shows, the officer accession goals for these two commissioning programs can increase or decrease each year, while accession goals for the other commissioning programs remain relatively stable. In addition to finding the most highly-qualified candidates based on fluctuating program goals, OSOs receive minority officer applicant submission goals for the OCC and PLC programs, a burden that is not shared with any other program source.

Table 2. USMC Officer Accession Goals by Program, Fiscal years 2008–2011

Program	FY 2008		FY 2009		FY 2010		FY 2011	
	Number	%	Number	%	Number	%	Number	%
OCC	720	41.5	831	40.5	800	37.9	665	33.9
PLC	333	19.2	537	26.2	626	29.7	612	31.2
NROTC	250	14.4	250	12.2	250	11.9	250	12.8
USNA	250	14.4	250	12.2	250	11.9	250	12.8
MECEP	110	6.3	110	5.4	110	5.2	110	5.6
ECP	62	3.6	62	3.0	62	2.9	62	3.2
MCP	10	0.6	10	0.5	10	0.5	10	0.5
Total	1,735	100.0	2,050	100.0	2,108	100.0	1,959	100.0

Source: Scott Casey, "USMC Officer Accession Working Group 202k Officer Accession Goals (Quantico, VA: MCRC, October 2008).

2. Marine Corps Commissioning Sources

Five primary program sources are used to commission officers in the Marine Corps: OCC, PLC, Enlisted-to-Officer programs, NROTC, and USNA. All candidates in commissioning source programs must meet academic, age, aptitude, basic entry standards, character, citizenship, dependency, medical, moral, and physical appearance and fitness requirements prior to being offered a commission.[9] As this study focuses on OSO recruiting and not all MCRC commissioning source programs, only OCC and PLC candidate eligibility requirements are discussed in detail. Both programs allow candidates to experience Marine officer training with no further obligation prior to being offered a commission; it can be likened to a summer internship program with a full-time position offered following successful completion.

a. Officer Candidates Class (OCC) Program

The OCC program is designed for the recruitment of full-time college or university-enrolled seniors and the commissioning of individuals with a baccalaureate (or higher) degree. The OCC program is considered MCRC's "direct market" program, as those selected receive their commission immediately upon successful completion of OCS. District-selected candidates are assigned to one 10-week OCS session; OCS offers

[9] MCO P1100.73 MPPM OFFPROC.

three OCS sessions per year. Upon successful completion of OCS, candidates are offered a commission and, if accepted, they are appointed to the rank of second lieutenant in the Marine Corps. Candidates who disenroll during OCS training must again compete for OSO submission and MCD selection for a future OCS session.

b. Platoon Leaders Class (PLC) Program

The PLC program is designed to attract and recruit full-time college students in their freshman, sophomore, or junior year of a bachelor's degree program. Two PLC enrollment options are available: PLC-Junior/Senior and PLC-Combined. Screening at OCS for the PLC-Junior/Senior option occurs in two six-week sessions during the candidate's freshman or sophomore summer (PLC-Junior), and again in the summer following the junior year (PLC-Senior). Candidates in the PLC-Combined option attend a 10-week OCS session during the summer prior to receiving their degree. Following completion of one OCS training session, successful candidates can apply for a monthly stipend for the remainder of their undergraduate studies prior to commissioning. Following completion of PLC-Senior or PLC-Combined OCS sessions, candidates are offered a commission upon receipt of their bachelor's degree. Eligibility to remain in the PLC program is contingent upon receiving a bachelor's degree within four-years of matriculation.[10]

c. Selection to Attend Officer Candidates School (OCS)

The mission of OCS is to "train, evaluate, and screen officer candidates to ensure they possess the moral, intellectual, and physical qualities for commissioning, and the leadership potential to serve successfully as company grade officers in the Operating Forces."[11] All candidates in commissioning sources except USNA are required to successfully complete the rigorous physical, academic, and leadership demands of OCS prior to being offered a commission. Selection to attend OCS is dependent on MCRC commissioning source goals; thus, not every eligible and qualified applicant is selected.

[10] MCO P1100.73 MPPM OFFPROC.

[11] U.S. Marine Corps, Officer Candidates School Mission Statement, Training and Education Command. Accessed 10 Dec 2010 from http://www.ocs.usmc.mil.

Applicants are submitted for MCD board selection by the individual's OSO. Candidates are selected to attend one OCS session, and if they decline, they must compete again for OSO submission and MCD selection to a future OCS session.[12]

3. Officer Recruiting Role and Impact on Minority Officer Production

a. Role of the Officer Selection Officer (OSO)

Eligible and competitive company-grade officers make up the 71 OSOs assigned throughout the 6 MCDs and are selected by an annual MCRC selection panel. As Marine Corps officer representatives, their professionalism and personal appearance are expected to convey the attractiveness of military service to the civilian market of potential officer candidates. Assignment within each MCD is based on college and university enrollment in the region and estimates of graduation rates and aptitude qualifications. Once assigned, an OSO's primary duties include the selection of the best-qualified applicants in program numbers and categories required, and maintaining the motivation of enrolled candidates so they remain qualified and persist in efforts to obtain a commission.[13]

Recruiting efforts by OSOs depend on the program mission goals they are tasked to obtain. These mission goals are by component (OCC/PLC ground, air, naval flight officer, and law) and expected year of commissioning. Diversity goals are for submission only and are not tied to direct mission. Efforts to recruit PLC candidates require different salesmanship techniques than efforts to recruit direct-market OCC candidates. Once PLC candidates successfully complete OCS, they return to school to complete their degree requirements prior to being offered a commission. During that time, OSOs must keep the candidate engaged and motivated to continue individual efforts to maintain a minimum 2.0 grade-point average (GPA), physical appearance, and full-time enrollment status to attain a commission and prevent attrition from the candidate

[12] MCO P1100.73 MPPM OFFPROC.

[13] Ibid.

pool.[14] Candidates recruited for the OCC program require less long-term attention from an OSO, but significant short-term attention (6-months or less) to prepare the candidate for OCS.

The "whole-person" concept, which includes a tangible and intangible evaluation of an individual, is used by OSOs to submit the most highly qualified applicants for selection to a candidate program by their MCD. Tangible qualifiers include work experience, physical and moral qualifications, college major, courses and course load, academic performance, aptitude test scores, physical fitness test scores, team sport participation, community involvement, and demonstrated leadership ability. Intangible qualifiers include physical appearance, mental and moral courage, integrity, commitment, desire, motivation, and selflessness.[15]

b. Officer Recruiting Impact on Minority Officer Accessions

Marine Corps minority officer recruiting received Congressional attention in the early 1990s when it was alleged that OCS instructors were biased against minority candidates, resulting in higher minority attrition rates from OCS.[16] In 1994, Secretary of the Navy John Dalton issued a directive requiring the officer corps of the Naval services to increase minority representation so that it would be racially representative of the nation by the turn of the century.[17] In 1995, the Marine Corps published its "Campaign Plan to Increase Diversity within the Officer Corps of the United States Marine Corps." Referred to as the "12-12-5" plan, the Marine Corps was expected "to ensure that, in terms of race and ethnicity, the group of officers commissioned in the year 2000 roughly reflects the overall population: 12 percent African American, 12 percent Hispanic, and 5 percent Asian."[18] Prior to the initiative, Black officer accessions rose from 4.7 to 7.4 percent,

[14] MCO P1100.73 MPPM OFFPROC.

[15] Dennis Sabal and Chad Lienau, "Building the Officer Corps of the 21st Century." *Marine Corps Gazette*. Nov 1997.

[16] Eric Schmitt, "Marines Find Racial Disparity in Officer Programs." *New York Times.* 20 Nov 1992.

[17] Department of the Navy, "Enhanced Opportunities for Minorities Initiative." 1997 Posture Statement. Accessed 11 Jan 2011 from www.navy.mil/navydata/policy/fromsea/pos97/pos-pg04.html.

[18] Randall Kehrmeyer, "The Officer Candidate Class: A Myopic Approach to 12-12-5," *Marine Corps Gazette*, 38, Sep 1997.

despite the decreased requirements for officer accessions.[19] By 1998, when the "12-12-5" plan was discontinued, Black officer accessions in the Marine Corps had risen as high as 9.6 percent.[20]

When MCD selection boards for officer candidates were established, whereby selection is based on individual merit and a determination of the most highly qualified applicants, selection rates for MCRC shipping to OCS fell from 7.1 to 4.4 percent. This made it difficult for minority accession growth, as higher-qualified White applicants were being selected for OCS. As a result, Black officer accessions dropped significantly from 9.6 percent in 1998 to 3.4 percent in 2008. Interestingly, the drop in minority participation occurred at a time when the proportion of minority college graduates was increasing nationally. Table 3 shows the number and percent of minority officer accessions from 1997 through 2009, with the comparable percentage of minority college graduates nationwide.

In 2007, a Government Accountability Office study determined that the Marine Corps was meeting all officer accession goals despite its heavy emphasis on non-Academy or ROTC program sources; however, minority representation among officer accessions did not reflect the demographics of the nation.[21] Because minorities generally tend to score lower than Whites on officer qualification criteria, OSOs must recruit a proportionately larger share of minority applicants from which highly-qualified candidates will be selected by MCDs.[22] While an OSO may recruit and submit a larger share of the applicant submission goal, only the most highly-qualified applicants, based

[19] Alphonse G. Davis, "Pride, Progress, and Prospects: The Marine Corps' Effort to Increase the Presence of African-American Officers (1970–1995)." Washington, DC: Headquarters, Marine Corps, History and Museums Division, 2000.

[20] U.S. Marine Corps (1998), "Yearly Chronologies of the United States Marine Corps – 1998." U.S. Marine Corps, History Division. Accessed 10 Jan 2011 from www.Tecom.usmc.mil/HD/Chronologies/Yearly/1998.htm

[21] Government Accountability Office Report to the Committee on Armed Services, House of Representatives, GAO-02-224. "Military Personnel: Strategic Plan Needed to Address Army's Emerging Officer Accession and Retention Challenges." GAO-02-224, 2007.

[22] James H. North and Karen D. Smith, "Targeting Officer Recruiting Goals and Resources." Alexandria, VA: Center for Naval Analyses. July 1993.

on individual merit, are selected for OCS training by the MCD board. Strategic area prospecting therefore becomes increasingly important for OSOs to find highly qualified minority candidates.

Table 3. Percent of Marine Corps Officer Accessions and College Graduates Who are Black, Hispanic, or Asian, Fiscal Years 1997–2009

Fiscal Year	Percent of Accessions			Percent of College Graduates		
	Black	Hispanic	Asian[a,b]	Black	Hispanic	Asian
1997	9	6	4	7	5	8
1998	9	7	6	8	5	8
1999	7	8	5	7	5	9
2000	6	6	5	8	5	9
2001	6	7	7	8	6	10
2002	6	7	5	8	6	10
2003	5	6	0	8	7	10
2004	4	7	2	8	7	11
2005[c]	4	7	3	8	7	11
2006	5	6	3	8	7	11
2007	4	6	3	9	8	11
2008	3	6	3	8	8	11
2009	4	7	3	8	8	10

Source: US Department of Defense, Population Representation in the Military Services, FY1997-2009 (Washington, DC: Officer of the Under Secretary of Defense for Personnel and Readiness, 2010).

[a]FY1997 to 2002 data depicts "Asian" as being all races other than White, Black, or Hispanic. In FY2003 Asian data reflect only those who marked themselves as "Asian."

[b]DoD policy for Race/Ethnicity data was not implemented correctly throughout the Service's for FY2003. USMC "Unknown" category indicates 120 (9.1%) officer accessions.

[c]Qualified Candidate Population derived from 2005 CNA study and reflects estimated eligible proportion of full-time, male college enrolled population as 5.5% Black and 5.4% Hispanic

The majority of prospecting for officer candidates involves working on college and university campuses to attract potentially eligible individuals. Strategic efforts to recruit new applicants are based on the OSO's analysis of the area, the QCP estimates, and the applicant submission goals given by MCRC. How much effort an OSO devotes to a particular campus depends on the existing estimates of candidate eligibility and students' propensity to join the military in that area. Despite successful OSO prospecting and efforts in meeting applicant submission goals, the percentage of minority candidates currently selected for OCS does not meet Marine Corps diversity goals. To better understand the OSO recruiting process, the following review is presented on how QCP and propensity are determined, along with a discussion of current issues in minority recruiting and accession.

B. LITERATURE REVIEW

Officer recruiting efforts by the Marine Corps in the 1990s apparently aided in achieving a greater number of minority accessions. Nevertheless, efforts to recruit Black officer candidates have been problematic since the turn of the century and have prompted several studies by the Center for Naval Analyses (CNA). The results of these studies show that, although the Marine Corps has met its minority accession goals, it has failed to maintain representation of minorities in proportion to that among college graduates.[23]

The officer recruiting strategy changed with the establishment of Marine Corps Recruiting Command (MCRC) in 1994. These strategic changes supported recommendations from CNA to accommodate both the geographic distribution of high-quality college graduates and changing demographics of the nation. Later studies suggested ways for MCRC to increase minority officer representation by estimating the eligible proportion of minorities in the nation who were qualified to serve as a commissioned officer. The following review summarizes selected studies on the recruiting, selection, and commissioning of minority officers in the Marine Corps over the past twenty years.

1. North and Smith (1993)

In 1993, CNA produced the study, "Targeting Officer Recruiting Goals and Resources," which identified the distribution of qualified candidates, by state, and developed a method to allocate minority recruiting goals by MCD. This study also designed a system for allocating the 72 OSOs throughout the nation based on QCP.[24] Previous minority allocation goals were not adjusted to reflect the demographics of the district or the aptitude test scores of youth in the canvassing area. The CNA report was written by James North and Karen Smith, who used the following three-step analytical approach:

[23]James North and Karen Smith, CNA Research Memorandum 93–81, *Officer Accession Characteristics and Success at Officer Candidates School, Commissioning, and The Basic School*. Undated.

[24] James North and Karen Smith, CRM 93–131 "Targeting Officer Recruiting Goals and Resources." Center for Naval Analyses. Jul 1993.

1. They created racial/ethnic groups, by gender, by collecting state-level data on DoD officer accessions, aptitude test results, and college graduates; then

2. They estimated the relationship between DoD officer shares and college graduate and aptitude-qualified shares to estimate QCP by race/ethnicity; and then

3. They converted resulting QCP into station and district shares to allocate recruiting goals by racial/ethnic group.

North and Smith collected data on four variables. The first was four-year officer accession production (fiscal years 1989 through 1992) by race, ethnic background, gender, state of residence, and military service. Second, information was collected by state on the population of qualified Marine Corps aptitude scores (SAT above 1000, ACT combined English and Math above 45) from the Educational Testing Service (ETS). Third, institution-level data were collected from the U.S. Department of Education (DOE) on baccalaureate-degrees awarded by race, ethnic background, gender, and state for the years 1988 and 1989. Finally, the fourth variable combined the percent share of DoD accessions from each state who were college graduates and considered aptitude-qualified on the basis of their SAT or ACT score.

North and Smith examined the data by race/ethnicity to develop a system to allocate MCD minority mission goals. The study compared Army and Navy officer accessions with Marine Corps officer accessions by MCD, and then compared these results to aptitude-qualified and college-graduate MCD shares. Through this comparison, the study determined where the Marine Corps could shift the officer recruiting structure to allocate selection opportunities by specific racial/ethnic groups based on Army and Navy officer accession success and the potentially qualified college market share in the MCD. The study determined that an untapped college market existed primarily in the 6th and 8th districts for all racial/ethnic groups.

Using regression analysis, the authors estimated DoD officer accession shares by White, Black, and Hispanic as a function of aptitude-qualified and college-graduate market shares. The results predicted that a one percentage-point increase in the college graduate share results in a 0.31 percentage-point increase in the state share of White

accessions, a 0.86 percentage-point increase in the state share of Black accessions, and a 0.05 percentage-point decrease in the state share of Hispanic accessions. All but the Hispanic college graduate results were statistically significant at the 0.01 level. The regression estimates were then used to predict market shares by state and shares per recruiting station. The results of the model recommended White mission increases in the 1st and 6th MCDs, Black mission increases in the 4th and 6th MCDs, and Hispanic mission increases in the 6th and 8th MCDs. Table 4 shows the combined regression results of the male officer accession shares by race/ethnicity from the CNA study.

Table 4. Regression Results of White, Black, and Hispanic Market Shares of SAT- or ACT-Qualified Test Takers and College Graduates from Center for Naval Analyses (CNA), Fiscal Year 1993

Variable[a]	White Accession Coefficient	Black Accession Coefficient	Hispanic Accession Coefficient
Constant	0.004 (4.59)**	0.001 (0.26)	0.003 (1.53)
College graduate share[b]	0.31 (3.58)**	0.86 (5.28)**	-0.05 (-0.22)
SAT share[c]	0.39 (6.23)**	0.12 (1.09)	0.52 (2.75)**
ACT share[c]	0.10 (3.19)**	-0.01 (-0.12)	0.33 (4.89)**
R^2	0.94	0.77	0.90

**Significant at the .01 level

Source: James North and Karen Smith. "Targeting Officer Recruiting Goals and Resources." Center for Naval Analyses (CRM 93-13, July 1993).

[a] The dependant vairable is the percentage of DoD (excluding Air Force) male-officer accessions that came from a state from FY1989 to FY1992.

[b] Predicted percentage-point increase in a state's share of DoD officer accessions given a 1-percentage-point increase in college graduates.

[c] Predicted percentage-point increase in a state's share of aptitude-qualified DoD officer accessions given a 1-percentage-point increase in aptitude test score.

The final pieces of the study estimate the total officer goal allocation by MCD and allocation of OSOs. Due to having no data on the relative effort put into recruiting by race/ethnicity, North and Smith treated each racial component equally in allocation by MCD according to the market distribution for that race/ethnicity. The MCD mission model is derived as:

$$D_{ij} = \sum S_{ij} * T_i,$$

Where D_{ij} is district *i's* mission for race/ethnicity component *j*, S_{ij} is district i's share of component j, and T_i is national mission.[25]

Thus, a district's mission is the sum of market goal shares per district times the yearly mission. This calculation was done for all districts and stations, providing a beginning guideline for allocating accession mission.

Finally, the study averages 19 candidates per OSO based on the national mission. North and Smith then divided each station's mission using their model by the average to allocate OSOs per MCD. Their model-derived distribution recommended moving six OSOs by increasing the number of OSOs in the 1st and 6th MCDs and decreasing OSO presence in the 8th, 9th, and 12th MCDs. Specific recruiting station recommendations were made based on the demographic composition of the qualified college market and area college graduates, with the goal of increasing both the quality and quantity of minority applicants.

It should be noted that the model fails to account for area attitudes toward military service, propensity to serve, college and university cost, work effort to procure candidates, and local unemployment rates. Furthermore, limited prior research and incomplete data received from sources detracted from the effectiveness of the study.[26] Regardless of the study's limitations, in 1994, when MCRC was officially established, CNA's recommended model-derived OSO allocations for the 1st, 4th, 6th and 12th MCDs were implemented.

[25] North and Smith, "Targeting Officer Recruiting Goals and Resources."

[26] Ibid., 36.

2. Perspectives on Minority Officer Success Rates

Following allegations of racial discrimination at OCS, CNA conducted "quick studies" that determined lower success rates for minority officer candidates at OCS and junior officers at The Basic School (TBS) and at promotion to captain.[27] These studies were believed to be inaccurate as "the Marine Corps [believed] that some of the data supplied for [that] part of the study were flawed."[28] To learn more on the subject and to enable more effective research, CNA held an independent conference in late 1993 to probe military leaders and academic experts on possible explanations and remedies for the lower success rates of minorities at OCS, TBS, and throughout the company-grade promotion system. The focus of the conference was to examine the qualitative aspects of selection and preparation, as well as leadership and culture.[29]

The panel first discussed the selection and preparation of officer candidates for OCS. Prior research determined that Blacks were selected and shipped to OCS with less time interacting and gaining information from their OSO than were White candidates; thus, Black candidates were likely less prepared than their White counterparts for the rigors of OCS.[30] In addition, Blacks who succeeded at OCS were less prepared for the challenges at TBS due to lack of prior selection preparation. Conference attendees debated that the reason for lower Black success was the "deficient swimming skills, unfamiliarity with rifles, or the lack of camping and scouting experience that teaches land-navigation skills," and the detailed explanation of expectations by officer recruiters.[31] Possible remedies that were mentioned included OSOs providing detailed

[27] James H. North and Karen D. Smith, "Officer Accession Characteristics and Success at Officer Candidate School, Commissioning and The Basic School," Center for Naval Analyses, Alexandria, VA, Dec 1993. The study found an 8-percentage point lower completion rate for Blacks at OCS, a 22-percentile lower average class rank for Blacks at TBS, and a 6-percentage-point lower promotion rate to captain for Blacks.

[28] James North, Donald Cymrot, Karen Smith, and Neil Carey, "Perspectives on Minority Officer Success Rates in the Marine Corps." CNA Occasional Paper. Alexandria, VA: Center for Naval Analyses, Jun 1994.

[29] Ibid., 3–7.

[30] Ibid., 9.

[31] Ibid, 13.

explanations of expectations, longer time periods interacting with the OSO before shipping to OCS, swim training prior to TBS, and holding OSOs accountable for candidate success.[32]

Aptitude tests were a contested topic of the conference, given the goal of increasing minority representation. One discussion looked at whether aptitude requirements should be lowered and waivers eliminated, or whether aptitude was significant for career success. Elliot Aronson, a Professor of Psychology at the University of California at Santa Cruz, introduced evidence from a study showing that aptitude waivers "depresses performance of those receiving the waiver," and recommended that the same high-quality selection could occur by lowering the aptitude requirement to the minimum waiver score allowed and eliminating aptitude waivers altogether. The result would be that candidates do not doubt their ability because a waiver was not required, and instructors and peers do not lower their expectations of waivered individuals because everyone admitted is aptitude-qualified. [33]

With regard to increasing the eligible population, Percy A. Pierre, former President of Prairie View A&M University, suggested that ROTC programs received greater interest than NROTC programs due to the lower aptitude requirements for the ROTC program. Pierre also contested the Marine Corps position that the high aptitude standard was set because test scores were positively correlated with later performance. He cited studies showing that the correlation between aptitude test scores and performance weakens rapidly after the freshman year of college. Analysis by CNA on OCS and TBS supported Pierre's argument, as they found "no statistically significant relationship between aptitude test score and successful completion of OCS" and only a small effect on TBS overall class rank. Lowering the aptitude requirements would then allow for a greater number of eligible minority applicants, and OSOs would be able to select an aptitude-qualified and highly motivated candidate for OCS.[34]

[32] North, Cymrot, Smith, and Carey, "Perspectives on Minority Officer Success Rates in the Marine Corps."

[33] Ibid., 14–17.

[34] Ibid., 17–21.

Marine Corps leadership and culture were also discussed as possible barriers to minority officer accessions. Claude M. Steele, Professor of Psychology at Stanford University, argued that by "embodying a culture of worthlessness. . . , [OCS] could have a greater negative impact on Blacks because it resonates with the stereotype that Blacks are less competent than Whites." The idea behind stereotype vulnerability is that, when an individual Black fails, it is under the assumption that he or she did not have the ability to succeed at all; but, if a White fails, it is seen only as an individual failure that can be remedied. Recommendations were to use the beginning of OCS as a confidence-builder in ability and then incorporate stress. Additionally, conference participants agreed that the need for minority role models in highly visible and important positions in the staff would aid in elevating the confidence of minority candidates.[35]

The qualitative perspectives of the CNA conference generated several ideas and recommendations for the Marine Corps to implement. Change in the form of orders and directives were applied to aptitude-test requirements,[36] mentoring programs,[37] and diversity training. Aptitude test waivers were eliminated, requiring that officer applicants achieve the minimum scores of 1000 for the SAT, or a composite score of 22 on the ACT.[38] Other changes, though not implicitly stated in orders and directives, were seen in advertising to promote challenge as a recruiting theme, at TBS with the establishment of mentor programs, and remedial opportunities in swimming, academics, and land navigation at TBS prior to being placed in a training. Changes were also introduced at recruiting stations, ensuring that applicants received more detailed information on the requirements of OCS.

[35] North, Cymrot, Smith, and Carey, "Perspectives on Minority Officer Success Rates in the Marine Corps."

[36] MCO P1100.73 MPPM OFFPROC.

[37] U.S. Marine Corps (2006), Marine Corps Mentoring Program. Washington, DC: Headquarters, Marine Corps.

[38] MCO P1100.73 MPPM OFFPROC.

3. Update of Marine Corps Officer Recruiting Structure Study (2005)

The Marine Corps used the CNA marketing model to allocate OSO resources until 2001, when Anton Jareb and Laura Parker from CNA proposed a new method for calculating QCP and allocating OSOs.[39] The 2005 study followed the same approach and updated the model by using institution-level data on enrollment, graduation, and student test scores to estimate the QCP for schools that met CNA's criteria to develop a QCP-based mission for MCRC.[40] Specific recommendations of moving individual OSOs were not made in this study. Rather, CNA provided the recommended MCD share of mission, number of OSOs per MCD, and the estimated QCP by institution to be used as a guide for MCRC's strategic recruiting plan.

Data on college and university enrollment and graduation rates were gathered using IPEDS for the most recent school year (2001–2002). The study only included schools with a male, full-time enrollment of 400 or more and excluded law schools, medical schools, and art institutes (i.e., specialty schools). In addition, data from Barron's *Profile of American Colleges 2005* were combined with IPEDS data to derive test-score and competitiveness ratings for each college or university. Princeton Review's *Complete Book of Colleges* was also used for any information missing from Barron's. The results provided an estimated QCP for 1,053 schools.[41]

The QCP estimate is structured by obtaining the 2003 total male, full-time enrollment via Barron's. Those data were then combined with the estimated race/ethnicity enrollment (through the estimated distribution of the fall 2001 data) by college, obtained through IPEDS along with estimated male graduation rates. Finally, QCP of each college was determined by applying a test-score-qualified rate, using aptitude-score distributions based on 2003 SAT and ACT median results. Thus, the QCP was estimated by taking 2003 Barron's data and multiplying it by race/ethnicity

[39] Anton Jareb and Laura Parker, *Marine Corps Officer Recruiting Structure Study*, Alexandria, VA: Center for Naval Analyses, 2001.

[40] Laura J Kelley, *Update of Marine Corps Officer Recruiting Structure Study*. Alexandria, VA: Center for Naval Analyses, 2005.

[41] Ibid, 4.

enrollment numbers and graduation rate estimates from 2001 IPEDS data, and then multiplying that result by a derived test score qualification rate.[42]

The estimated QCP was then used to recommend MCD mission shares. The results indicate that the district mission is directly proportional to the fraction of QCP within a given district and racial/ethnic group. Mission shares were allocated based on the following model: $M_{ij} = QCP_{ij} \div QCP$ where i = districts and j = race/ethnicity.

The results, as seen in Table 5, show that the demographics of the nation are shifting throughout the MCDs. According to the study, the qualified number of Whites (male, full-time college, and aptitude-qualified) decreased by an estimated 4 percentage points in both recruiting regions, while the corresponding number of Blacks, Hispanics and Others increased by a minimum of 5 percentage points. The national total showed minority QCP for Blacks and Hispanics at 5.5 percent of the eligible college population, a seemingly more manageable recruiting goal than DoD's estimates of the civilian college graduate population (8 percent for Blacks and 7 percent for Hispanics).[43]

Table 5. Comparison of Racial/Ethnic Proportions of Estimated Qualified Candidate Population, 2001 versus 2005

MCD	White Percent		Black Percent		Hispanic Percent		Other Percent		Percent Total	
	2001	2005	2001	2005	2001	2005	2001	2005	2001	2005
1	78.4	76.3	4.8	5.2	4.2	4.5	12.2	14.1	21.4	23.8
4	85.4	83.0	6.7	7.3	1.8	2.1	6.2	7.6	15.7	15.5
6	81.2	77.5	9.1	10.5	5.6	6.4	4.1	5.6	14.7	13.7
ERR	81.5	78.6	6.6	7.2	3.9	4.3	8.1	10.0	51.8	53.0
8	79.7	75.1	5.4	4.5	8.4	10.9	6.5	9.5	12.3	11.3
9	88.1	86.3	3.3	3.7	2.2	2.5	6.4	7.4	19.4	19.6
12	64.5	60.1	2.7	2.7	8.8	8.9	24.0	28.3	16.5	16.1
WRR	77.9	74.7	3.6	3.5	6.0	6.7	12.4	15.0	48.2	47.0
All	79.7	76.7	5.2	5.5	4.9	5.4	10.2	12.4	100.0	100.0
Total	249,595	259,911	16,140	18,524	15,413	18,420	31,907	41,891	313,055	338,748

Source: Derived from Laura Kelly, "Update of Marine Corps Officer Recruiting Structure Study," Center for Naval Analyses. March 2005

Shaded numbers represent increases or decreases of more than 10 percentage points from 2001 to 2005

[42] Kelley, *Update of Marine Corps Officer Recruiting Structure Study.*

[43] U.S. Department of Defense, *Population Representation in the Military, FY2003*. Prior to 2003, race category variables included White, Black and Other with self-identified Hispanics included as a discrete category variable. Guidelines set by OMB required representation of 5 race categories (American Indian or Native Alaskan, Asian, Black or African American, Native Hawaiian or Other Pacific Islander, and White) along with identifying the Hispanic identity

The Marine Corps minority officer goals are an important aspect of officer recruiting, and the primary focus of this study. To aid the Marine Corps in meeting these goals, CNA identified minority recruiting mission goals based off the QCP of each district and the top schools with the highest QCP for minority groups. Although not stated in the study, it was recommended and implied that the 1st MCD and 9th MCD receive two additional OSOs each from the other MCDs to meet nearly 45 percent of the Marine Corps total officer accession mission, while maintaining 71 total OSOs throughout MCRC. The highest estimated minority QCP schools were also identified in the study to "help guide OSOs so they continue to be successful in obtaining the officer recruiting mission."[44]

4. Minority Officer Accession and Success

Originally published as a series of memoranda, CNA produced an expanded analysis of Black and Hispanic Marine accessions, representation, and success to determine if recruiting and retention efforts generate comparable demographic shares to the nation.[45] The largest concern, based on the results of this analysis, is that the small percentage of current accessions, when compared with national demographics, will result in a small senior officer share in the future. The findings of the study produced no specific recommendations for the Marine Corps to increase minority accessions or retention of minority officers.[46]

Cohort analysis was used to determine the extent to which Black and Hispanic officer accessions progressed into senior officer ranks. This was based on the Marine Corps internal labor market, which hypothesized that "today's Black and Hispanic distribution are directly dependant on the distribution of prior years' accessions."[47]

[44] Kelley, *Update of Marine Corps Officer Recruiting Structure Study*.

[45] A. Hattiangadi, C. Hiatt, G. Lee, A. Quester, and R. Shuford (2007), *Black and Hispanic Marines: Their Accession, Representation, Success, and Retention in the Corps*. Alexandria, VA: Center for Naval Analyses.

[46] Ibid., 27.

[47] Ibid., 27.

Year-groups were constructed by the current total officer grade weighted with the distribution of accession years for the cohort.[48] Table 6 reproduces CNA's cohort accession results.

As seen in Table 6, CNA determined that Hispanic officers have been retained and promoted through field-grade ranks in larger numbers than their accession representative cohort, while Black officers only meet their accession cohort representation for promotion to major and general officer. According to the authors, further analysis of promotion reveals the following: "Black and Hispanic Marine officers have done very well in officer promotions. Black Marine Corps officers have exceeded their accession shares as Majors and General Officers. . . . Hispanic officers have exceeded their accession shares at all field grade and general officer levels. In short, they have been promoted and retained better than others."[49] Simply stated, it should come as no surprise that, for minorities to gain higher representation in senior officer grades, greater accession and retention efforts must occur.

Table 6. Comparison of Black/Hispanic Shares for Field Grade and General Officers

	O-4	O-5	O-6	O-7+
Black				
Percentage of original accessions	7.0	5.3	4.9	4.8
Percentage in grade March 2007	7.1	4.3	3.2	6.1
Hispanic				
Percentage of original accessions	5.3	3.5	1.7	1.3
Percentage in grade March 2007	5.2	3.6	2.0	2.4

Source: Data from Hattiangadi, A., Hiatt, C., Lee, G., Quester, A., and Shuford, R. (2007) Black and Hispanic Marines: Their Accession, Representation, Success, and Retention in the Corps. Alexandria, VA: Center for Naval Analyses, 29.

[48] Hattiangadi, Lee, Quester, and Shuford, *Black and Hispanic Marines: Their Accession, Representation, Success, and Retention in the Corps*. Thus, for all O-4s for the year 2007 the commissioning date was assigned to its respective year. Each accession years' Black or Hispanic share was multiplied by the accession share of O-4s for that year and summing the shares across all years, then dividing by 100 to give the accession share for any given group.

[49] Ibid., 28.

5. Propensity

Several studies have looked at military-age youth and their propensity to enlist in the Armed Forces, but very little on the propensity of college-bound or college-educated persons to serve as commissioned officers. A primary source for a majority of propensity studies is DoD's annual Youth Attitude Tracking Survey (YATS), conducted from 1976 through 1999, and the Youth Poll (YP), conducted semi-annually since 2001. These polls on youth propensity to join the military have helped to shape the Services' advertising and recruiting campaigns and have been validated as the most effective approach available in estimating propensity to serve.[50] The most recent YP reports that youth enlistment propensity has remained stable since 2008 and unchanged across the Services, although college aspirations are gradually increasing.[51]

Congressional concern over minority representation in the military's officer corps provoked JAMRS to conduct a minority officer study. The study's primary purpose of the study was to provide analysis of barriers to interest in officer training programs among White, Black, Asian, and Hispanic college-market (CM) youth.[52] The initial goals were stated as follows:

1. Estimate the proportion of the college market youth open to military service.
2. Describe how each demographic group differs from the other.
3. Identify actionable strategies to efficiently reach the target population.

The data used to estimate the CM propensity for service came from seven YP surveys conducted during 2006 to 2009. The YP survey is administered using computer-assisted telephone interviews to provide a stratified random sample that is weighted to be

[50] B. R. Orvis, M. T. Gahart, and A. K. Ludwig, *Validity and Usefulness of Enlistment Intention Information*. R-3775-FMP, Santa Monica, CA: RAND Corporation (1992).

[51] R. Corvalho,S. Turner, C. Krulikowski, S. Marsh, A. Zucker, and M. Boehmer, "Youth Poll Wave 19-June 2010: Overview Report." Arlington, VA: DoD (DHRA) JAMRS. December 2010.

[52] Taylor L. Poling, "Minority Officer Study: Archival Component - Research and Data Analysis Plan." JAMRS. September 2009. Accessed 20 Jan 2011 from http://www.dmren.org/jamrs/execute/mrs/document/download/1244655435539/minority-officer-study_minority-officer-study-archival-component-research-and-data-analysis-plan_06-10-2009.pdf.

representative of national demographics.[53] The YP survey requested information on propensity to join the military, impressions and knowledge of the military, along with attitudes and recollection of recruiting efforts. The sample population was derived from 16- to 24-year-old White, Black, Hispanic, and Asian persons who indicated they had graduated from college, were enrolled in college, or were college-bound. The sample population contained 19,241 observations, with the following distributions by race/ethnicity: 56 percent White, 22 percent Black, 2 percent Asian, and 20 percent Hispanic.[54]

Estimates of demographic propensity were calculated by JAMRS from survey items that report an individual's self-reported likelihood to serve. The timeframe of 2006 through 2009 was specifically targeted due to the underrepresentation of minorities among officer accessions as compared with their representation nationwide. Discriminate analysis and logistic regressions were used to evaluate and distinguish differences between selected racial/ethnic groups.[55] Estimates as a result of the question, "How likely is it that you will be serving in the Military in the next few years?," show that, of the college-market youth, 6 percent of Whites, 10 percent of Blacks, 8 percent of Asians, and 11 percent of Hispanics are positively "propensed" to join the military. Each CM youth demographic is about 2 percent less positively propensed than the demographic of all youth. Results also show that, of all racial/ethnic groups, the Black CM population is the most polarized, meaning that Black CM youth are either positively propensed or "definitely not" propensed.[56]

[53] Orvis, Gahart, and Ludwig, *Validity and Usefulness of Enlistment Intention Information*. and M. Ford, B. Griepentrog, K. Helland, and S. Marsh. *JAMRS Report 2009-005 Propensity Validation*.

[54] Poling, "Minority Officer Study: Archival Data Analysis of College Market Youth."

[55] T. L. Poling, K. Helland, B. Griepentrog, S. M. Marsh, M. Boehmer, and A. Zucker, *Minority Officer Study Archival Component: Research and Data Analysis Plan.* JAMRS Report #2009-XX May 2009. http://www.dmren.org/jamrs/execute/mrs/document/download/1244655435539/minority-officer-study_minority-officer-study-archival-component-research-and-data-analysis-plan_06-10-2009.pdf extracted 18 January 2011.

[56] Poling, "Minority Officer Study: Archival Data Analysis of College Market Youth."

The JAMRS MOS report provides the following recommendations on targeting specific racial/ethnic groups for potential service in the officer corps:

- White CM Youth – With an estimated 6 percent propensity, and making up over 70 percent of officer accessions, JAMRS recommends that recruiting strategies maintain interest and connection with White CM youth by addressing the honor and duty of military service and ensuring experiences of existing service member's and veterans are communicated.[57]
- Black CM Youth – With estimates being either propensed (10 percent) or "definitely not" propensed (67 percent), recruiting strategies need to involve Black civic and social community leaders, along with personal contact and improved communication of officer programs and military lifestyle.[58]
- Asian CM Youth – As the lowest-propensed minority group (8 percent), recruiting strategies need to educate the Asian market on officer programs and the meaning of commissioned service over enlisted service, as only 36 percent report any family or community connection to the military.[59] Furthermore, military self-efficacy in Asian CM youth is an issue, as this group is less likely to believe they can qualify for military service.[60]
- Hispanic CM Youth – As the highest-propensed group (11 percent), JAMRS research shows that a majority of Hispanic officer contracts are among persons with prior-service, meaning knowledge of officer programs. Recruiting strategy recommendations mirror Black CM Youth recommendations, calling for increased personal contact and improved civic and social leader communication.[61]

6. Current Issues: Minority Officer Accession and Retention

The FY2009 National Defense Authorization Act mandated the creation of the Military Leadership Diversity Commission (MLDC) to conduct a "comprehensive

[57] Poling, "Minority Officer Study: Archival Data Analysis of College Market Youth."

[58] Ibid., 76.

[59] Ibid., 77.

[60] K.A. Marsh, *Military Self-Efficacy Undermines Asian Propensity.* JAMRS, 27 October 2010. http://www.dmren.org/jamrs/execute/mrs/document/download/1289415927878/in-depth-studies_2-general-population-survey_military-self-efficacy-undermines-asian-propensity-executive-note_11-10-2010.pdf. Extracted 26 January 2011.

[61] Poling. "Minority Officer Study: Archival Data Analysis of College Market Youth."

evaluation and assessment of policies that provide opportunities for the promotion and advancement of minority members of the Armed Forces, including minority members who are senior officers."[62] The final report, several issue papers, decision papers, and the draft report to Congress is posted at the MLDC website for public viewing. The research and analysis provided in these reports point out that the personnel life cycle of military members is shaped by the cumulative effects of structural (policy) and perceptual (personal) barriers. As a closed personnel system, the military's policies and service-member's decisions shape the demographic composition of the force and its future leaders.[63] Following is a synopsis of the research, analysis, and recommendations by MLDC regarding military eligibility, accession, and retention barriers.

a. Eligibility Barriers

To evaluate eligibility requirements for military service, MLDC first reviewed the use of standardized aptitude tests to determine eligibility for application into the Armed Forces.[64] By analyzing numerous studies of standardized aptitude test validity, and how the lower average scores of minorities affect the demographic mix eligible for service, MLDC examined the influence aptitude tests have on diminishing the eligible population and possible alternatives or supplements to the tests. Despite criticism on racial bias in the design of aptitude tests—and the possibility of supplementing aptitude tests with integrity tests, personality tests, interviews or cognitive- and non-cognitive-based tests—MLDC concluded that the SAT, ACT, and AFQT remained the best existing selection tools for determining immediate applicant eligibility.

[62] National Defense Authorization Act for 2009, Pub.L., 110–417, 122 Stat. 4356, October 14, 2008 codified at 10 U.S. Code §596.

[63] Military Leadership Diversity Commission, "From Representation to Inclusion: Diversity Leadership for the 21st-Century Military. Final Report of the Military Leadership Diversity Commission." January 2011. http://mldc.whs.mil/index.php/draft-final-report accessed on 9 March 2011.

[64] MLDC, Issue Paper #10, "Requirements and the Demographic Profile of the Eligible Populations: The Use of Standardized Aptitude Tests in Determining Eligibility." January 2010. Accessed on 18 Jan 2011 from http://mldc.whs.mil/download/documents/Final%20Report/MLDC_Final_Report.pdf.

Population demographic trends and educational attainment were also analyzed to study their effect on the recruiting-age population.[65] Their research found that, although total population demographics are shifting toward a larger minority representation and greater full-time college enrollment of 20-24 year-old males, Hispanic and Black college enrollment decreased by 11.6 percent and 3.2 percent, respectively, between 1996 and 2006. According to the National Center for Education Statistics (NCES), this minority educational gap closes somewhat for 25-29 year-olds, where 9 percent of the Black population and 7 percent of the Hispanic population hold a bachelor's degree. However, "this improvement in no way kept pace with the increase in Hispanics' share of the population at that age."[66] MLDC concluded that:

> The growing share of minorities in the population makes attaining population representation in the Services a moving target, and persistent lags in educational attainment by Hispanics and Blacks make the target even more elusive. Different patterns of economic and family characteristics underlie these demographic differences in educational attainment, making it hard for the Services to derive ways to remedy them.[67]

b. Accession Barriers

To address the role accessions have in shaping the minority officer corps, MLDC analyzed demographic trends of the services from fiscal years 1973 through 2008 and compared the characteristics of past accessions with active duty flag/general officers, O-6s, and officers in pay grades O-5 and below.[68] Accession analysis was accomplished by using DoD's annual "Population Representation Report" and comparing each year with the eligible recruiting pool, defined as labor force participants who hold a bachelors' degree and are between the ages 22 and 24.[69] Results show that representation of

[65] MLDC, Issue Paper #11, "Requirements and the Demographic Profile of the Eligible Population." January 2010. Taken from http://mldc.whs.mil on 18 Jan 2011.

[66] Ibid., 3.

[67] Ibid., 4.

[68] MLDC, Issue Paper #46, "Gender and racial/Ethnic Profiles of Active-Duty Officer Accessions, Fy73-FY08. May 2010. http://mldc.whs.mil/download/documents/Issue%20Papers/46_Officer_%20Accession.pdf accessed 18 January 2011.

[69] U.S. Department of Defense, *Population Representation in the Military Services*. Washington, DC: Office of the Under Secretary of Defense, Personnel and Readiness. (FY02–FY08).

minority officer accessions increased over time; but, compared with the eligible pool, several racial/ethnic groups remain underrepresented. Since the officer "pipeline" determines the future composition of senior officers, minority representation at this level will depend on the racial/ethnic mix of current accessions as accession shares.[70]

Indeed, data analysis shows that, at every level of leadership, the racial/ethnic mix of the force is primarily determined by the mix at accession. Thus, outreach and recruiting bears the brunt of the responsibility for reaching diversity at senior leadership levels. Conclusions made by MLDC are that, "as the recruiting pool becomes more racially and ethnically diverse, accession will become more racially and ethnically diverse and, eventually, so will senior leadership."[71] Obviously, this is in the very nature of the military organization, which lacks lateral entry. Recommendations from MLDC include further study of the effectiveness of outreach programs, transfer and commissioning opportunities at two-year colleges, and developing demographic application (not selection) goals for recruiters.

c. Retention Barriers

MLDC also explored career-field demographics, promotion opportunities, and continuation rates to determine if there was a difference in the demographic makeup of who choose to remain in military service. Fiscal year 2000 through 2008 records from the Proxy Personnel Tempo (PERSTEMPO) files from DMDC and survey results from the Defense Equal Opportunity Management Institute's (DEOMI's) Organizational Climate Survey (DEOCS) were used by MLDC to calculate and evaluate retention behavior.

For career fields, data indicate that the senior leadership is disproportionally drawn from combat arms career fields, and that minority officers tend

[70] MLDC, Issue Paper #46, "Gender and racial/Ethnic Profiles of Active-Duty Officer Accessions, Fy73–FY08. May 2010. http://mldc.whs.mil/download/documents/Issue%20Papers/46_Officer_%20Accession.pdf accessed 18 January 2011.

[71] Ibid., 8.

to occupy support fields disproportionately when compared with White, non-Hispanics.[72] Obstacles to minority officer retention include structural barriers that limit accession and assignment slots to tactical career fields and perceptual barriers that support occupations are more transferable to the civilian job market. In addition, promotion above O-5 is heavily influenced by early career staff and leadership assignments, of which a smaller proportion of supporting field occupations is selected due to the command structure putting a premium on individuals with tactical occupations for staff billets. MLDC concluded that minorities are less informed and "lack sufficient knowledge about key assignment opportunities."[73] Accordingly, it was recommended that an effort be made to increase mentoring opportunities from accession to retirement as an aid in career decision-making.

Demographic differences in promotions were analyzed based on promotion selection boards, assignment histories, performance evaluations, and information on promotion processes. Results by MLDC indicate that the promotion process is institutionally fair, based on the "the needs of the Services and the best-and-fully-qualified criterion, without regard to race, ethnicity or gender."[74] Regardless of the perceived fairness of the promotion board process, however, MLDC found that minority officers' promotion rates were below pay grade-specific averages compared with those of their White counterparts.

MLDC also found that assignment histories were a structural barrier to senior leadership promotion rates and retention, while performance evaluations were a perceptual barrier to promotion and retention. Due to high concentrations of minority officers in combat support fields, and the fact that a higher percentage of combat arms

[72] MLDC, Issue Paper #23, "Military Occupations and Implications for Racial/Ethnic and Gender Diversity: Officers." March 2010. http://mldc.whs.mil/download/documents/Issue%20Papers/23_Officer_%20Occupational_%20Choice.pdf accessed 18 Jan 2011.

[73] Military Leadership Diversity Commission, "From Representation to Inclusion: Diversity Leadership for the 21st-Century Military. Final Report of the Military Leadership Diversity Commission." January 2011. http://mldc.whs.mil/index.php/draft-final-report accessed on 9 March 2011.

[74] MLDC, Issue Paper #3, 4 "The Active-Duty Officer Promotion and Command Selection Process: Considerations for Race/Ethnicity and Gender." November 2010 Accessed 18 Jan 2011 from http//mldc.whs.mil/index.php.

fields receive promotion to senior leadership, demographics of the most-senior leadership levels contain higher percentages of White males.[75] Therefore, promotion policies that require the knowledge combat arms service-members receive in staff and command positions increase their opportunities for promotion to senior leadership ranks over supporting arms individuals' knowledge of their particular field. Performance evaluations presented a perceptual barrier to promotions according to analysis of the 2009 Workplace and Equal Opportunity Survey. The survey reported that minority officers were "more likely than whites to believe that race and ethnicity were a factor in both their assignments and their performance evaluations."[76] Based on the inconclusive results of the research, MLDC recommended further study by the Services on both of these structural and perceptual barriers.[77]

Lastly, MLDC reviewed the Services' attempts to educate their members on the promotion system. A supplemental survey conducted by MLDC indicated that "service-members 'moderately agree' with statements that indicate that they believe they have enough knowledge of the promotion system;"[78] however, many service members also said that knowledge of the promotion system was gained only after they were eligible for selection. MLDC examined approaches the Services used to convey the promotion process. It was found that each service used multiple approaches, such as career milestone goals, seminars, counseling, and mentoring, but no Service evaluated the effectiveness of any of these approaches.[79]

Conclusions drawn by MLDC on retention are that promotions may be biased toward career assignments and that the lack of knowledge very early in a service-member's career could limit an officer's opportunities for promotion to a senior leadership position. This retention barrier could be diminished through a more flexible

[75] MLDC, Issue Paper #23, 4.

[76] MLDC, Issue Paper #43, "Knowledge and Perceptions of Promotion Within the Services." November 2010. http://mldc.whs.mil/download/documents/Issue%20Papers/43_Fairness_Perception.pdf. Accessed 18 Jan 2011.

[77] Ibid., 3.

[78] Ibid., 3.

[79] Ibid., 2–4.

officer career management system that does not necessarily prioritize tactical occupations, but is based more upon specified knowledge, skills, and abilities, thereby enhancing opportunities for all service-members.

C. CHAPTER SUMMARY

The Marine Corps strategy of prospecting, recruiting, selecting, and screening highly qualified individuals for commissioned service places an incredible burden on Marine OSOs. A significant number of young adults whose propensity for service is high, and who have the necessary qualifications, are already enrolled in Academy and ROTC programs that provide significant academic scholarships. Congressional and societal pressure to have an officer corps that reflects the demographic composition of the nation places an additional burden on OSOs, as today's accessions advance into the senior leadership of the Marine Corps. Reviewing the background of commissioning source programs, the role of officer recruiters and the impact of recruiting efforts aid the reader's understanding of MCRC's minority officer recruiting strategy. With minority officer accession rates falling and minority college enrollment and graduation rates rising, specification of the college market and QCP is increasingly important to an OSO's recruitment strategy.

The studies examined here suggest that, to increase racial/ethnic diversity from accession to retirement, officer recruitment must prospect and attract not only eligible and highly qualified minorities, but military-propensed minority candidates enrolled in college. CNA examined the success of minority accessions in the Army and Navy and provided a basis for developing the present QCP model that MCRC uses to shape OSO allocation, geographic distribution, and mission goals. Estimates from these studies suggest that minority officer accession goals should reflect the minority proportions of the QCP rather than the proportion of college graduates used by DoD. The QCP is a more realistic target, given that a smaller proportion of the eligible population is mentally, physically, and morally qualified for commissioned service; and historical evidence suggests that propensity to serve should be included in target estimates, as it is a strong predictor of actual service.

A qualitative evaluation of barriers to accession by CNA in 1994, and by MLDC in 2010, highlight potential issues with minority eligibility, accession, and retention. Changes, such as community and leadership outreach programs, may increase minority accession and retention, but are not easily measured for their effectiveness. Research, however, shows that valid measurable aptitude requirements, despite White applicants receiving higher qualified scores over minority applicants, remain the most effective policy for ensuring early accession success. The ability to recruit minorities is clearly influenced by lower average score, but this may be counterbalanced by a higher propensity to serve. A 2000 study by JAMRS estimates that propensity explains over 32 percent of the youth population's behavior, and YP survey results show that minorities are generally more highly-propensed to serve than are Whites. These findings suggest that OSOs could have more opportunities to prospect and recruit high-quality minorities on college campuses, and mission goals can be more reflective of national demographics, if propensity is used in the QCP model. Below, this thesis explores ways to incorporate propensity within the QCP model.

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III. DATA AND PRELIMINARY ANALYSIS

This chapter describes the data used in this research and presents descriptive statistics. No dataset has all pertinent information on eligible male, college students; thus, construction of the data sets used in this analysis required three phases. The first phase collected data on the number of eligible male, full-time college enrollments based on average test scores, graduation rates, and national propensity to serve in the military. These figures are used to estimate the Propensity-Weighted Qualified Candidate Population (PW-QCP) at the state and Officer Selection Officer (OSO) level. The second phase evaluated current five-year applicant and accession data and attempted to validate the QCP estimate by comparing it with Marine Corps Recruiting Command (MCRC) officer production at the OSO level. Finally, in Phase 3, multivariate statistical analysis of Phase 2 data was used to predict the probability of accession at the Officer Selection Station (OSS) level.

A. DATA

The first phase of obtaining the eligible candidate population combines information from three data sets. First, information obtained through the Integrated Postsecondary Education Data System (IPEDS)[80] and Barron's *Profiles of American Colleges 2008*[81] provided data on male, full-time enrolled college population, average test scores, and graduation rates by institution. Second, a propensity to serve rate is determined via analysis of the Joint Advertising Market Research and Studies (JAMRS) Minority Officer Study survey[82] and the propensity rate is combined with the IPEDS data

[80] U.S. Department of Education, Integrated Postsecondary Education Data System. http://nces.ed.gov/ipeds/datacenter.

[81] *Barron's Profile of American Colleges 2008,* Edition 29. Hauppauge, NY: Barron's Educational Series, Inc, 2009.

[82] Joint Advertising Marketing Research and Studies, "Minority Officer Study: Youth Component Brief." Accessed 20 Jan 2011 from http://www.dmren.org/jamrs/execute/mrs/studies/minority-officer-study.

to estimate the PW-QCP for each college in the study. Third, MCRC data on OSO locations and canvassing area are obtained and used to estimate the PW-QCP numbers for each OSO within a MCD.

The second and third phases involve the collection of fiscal year 2006 through 2010 candidate applicant data from the Marine Corps Recruiting Information Support System (MCRISS), which is merged with complementary fiscal year active duty accessions from the Marine Corps Total Force System (MCTFS). The merged MCRISS/MCTFS officer candidate data are used in Phase 2 to analyze the current recruiting applicant and accession production strategies by MCRC and to validate the PW-QCP numbers employed in this study. The data set is again used in Phase 3 to predict the probability of accession at the OSO level. These predictions are used to determine if MCRC allocated minority applicant submission goals and this model's PW-QCP estimates are valid predictors of accession.

1. Phase 1: Qualified Candidate Population Data

a. Department of Education Data

College enrollment, average test score and graduation rate data were obtained through IPEDS. IPEDS data are collected for the Department of Education (DOE) by the National Center for Educational Statistics (NCES). The Higher Education Opportunity Act of 2008 charges NCES "to collect, collate, analyze, and report complete statistics on the condition of American education."[83] The Data Center files provided through IPEDS house institutional-level data on postsecondary institutions that are participants in federal financial aid programs and are open to the public. This study uses data extracted for the 2007–2008 school year, which is the most current and complete information on enrollments.

This study focuses on IPEDS data on schools that primarily grant baccalaureate degrees, have male, full-time enrollment over 400, provide average annual ACT or SAT test scores, publish cohort graduation rates, and provide student

[83] Higher Education Opportunity Act of 2008, Pub. L. No. 110-315, 119 Stat. 2808 (2007).

demographics. This study focuses on 1,088 schools of the 2,009 eligible schools identified in the IPEDS database. A total of 921 schools were eliminated for the following reasons: enrollment of less than 400 (770 schools eliminated), were specialty schools (31 schools eliminated), were strictly online schools (29 schools eliminated), provided no graduation information (15 schools eliminated), or provided no test data (76 schools eliminated). Supplemental test score data not available in IPEDS were obtained using Barron's *Profile of American Colleges* 2008, which contains mean test scores for all but 76 schools. Detailed information on the 1,088 schools used in this study is contained in the Appendix.

b. Youth Propensity to Serve Data

In addition to having the minimum academic and aptitude test scores, officer candidates must be morally, physically, academically, and medically qualified to serve. This makes prospecting for individuals difficult without perspicuous knowledge of an OSO's area of operations. Waivers offer a way for OSOs to increase the number of qualified candidates, but an aspect of QCP that cannot be "waived" is an individual's propensity to serve in the armed forces. Determining the propensity for college-enrolled youth to seek a commission in the Armed Forces is an important variable OSOs must consider before choosing an area to canvass. This study uses the JAMRS Youth Component Surveys of the Minority Officer Study to estimate the propensity to serve in the military.[84]

As an official DoD program, the Defense Human Resources Activity (DHRA) financially operates and maintains JAMRS to "provide advertising and marketing solutions that increase the effectiveness of the Department's recruiting program."[85] The Minority Officer Study (MOS) conducted by JAMRS surveyed American college-bound and college-enrolled youth from 2006 to 2008, the same time frame during which this study's applicant base is generated. The survey provides an

[84]Poling, "Minority Officer Study: Archival Data Analysis of College Market Youth."

[85] Defense Human Resources Activity, "Fiscal Year 2009 Budget Estimates." February 2008. Accessed 20 Jan 2011 from http://comptroller.defense.gov/defbudget/fy2009/budget_justification/pdfs.

estimate of the minority population's propensity to serve and is used in this study to aid in the appropriate estimation of QCP. The data from JAMRS employed in this study come from the Youth Component data of the MOS, which uses DoD's Youth Poll to determine interest in becoming an officer by race/ethnicity and other demographic variables. DoD's Youth Poll (YP) is conducted semi-annually on approximately 8,000 American youth between the ages 16-24, using a random sample of telephone interviews requesting information on propensity to join the military, impressions and knowledge of the military, along with attitudes and recollection of recruiting efforts.[86]

Estimates of propensity to serve are formulated by JAMRS through evaluation of response category percentages calculated from a military propensity item included in the YP and Ad Tracking datasets. The specific question in the survey that measured propensity was: "How likely is it that you will be serving in the Military in the next few years?" Possible responses were "Definitely," "Probably," "Probably Not," and "Definitely Not." Average "Definitely" and "Probably" responses from 2006 to 2010 were combined by JAMRS to form a propensity ratio.[87] For this study, the MOS propensity results from the College Market portion of the YP were converted and merged with the IPEDS data to estimate QCP. Figure 1 shows this model's progression, from the broad college-enrolled population to PW-QCP.

[86] T. Poling, K. Helland, B. Griepentrog, S. Marsh, M. Boehmer, and A. Zucker, "Minority Officer Study Archival Component: Research and Data Analysis Plan." May 2009. JAMRS. DHRA, Arlington, VA. http://www.dmren.org/jamrs/execute/mrs/document/download/1244655435539/minority-officer-study_minority-officer-study-archival-component-research-and-data-analysis-plan_06-10-2009.pdf extracted 20 Jan 2011.

[87] Poling, "Minority Officer Study: Archival Data Analysis of College Market Youth."

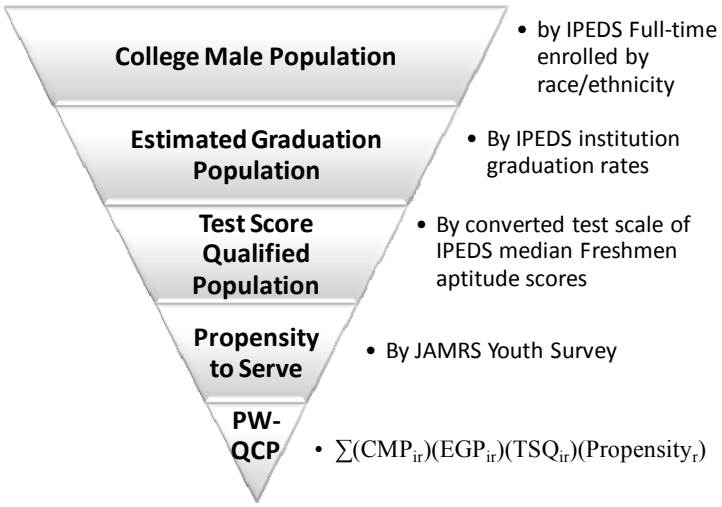


Figure 1. Approach for Estimating Propensity-Weighted QCP (PW-QCP)

c. Officer Selection Officer (OSO) Area of Operation Data

The final dataset in Phase 1 involved identifying colleges for which an individual OSO was responsible. Every college used in this study is covered in an OSO's area of operations. As such, the OSS is the desired geographic level at which to acquire data. Data obtained by MCRC identified OSS area of operations by zip code.[88] Using zip codes, OSSs were matched with the colleges in an OSO's area of operation, resulting in estimates for 73 OSSs.

2. Phase 2 and Phase 3: Current Officer Recruiting Applicant and Accession Data

The second phase of this research involves the collection of fiscal year 2006 through 2010 officer candidate applicant data through the Marine Corps Recruiting Information Support System (MCRISS) and merging it with complementary fiscal year active duty accessions from the Marine Corps Total Force System (MCTFS). The following is a review of the data sources and description of variables used in the merged dataset.

[88] Jeremy Hall, e-mail message to author, 15 Dec 2010. "MUDfile_101215." Microsoft Office Excel file.

a. MCRISS Applicant Data

The officer candidate applicants were drawn from a data set exported from MCRISS, which is housed in the Marine Corps' Total Force Data Warehouse (TFDW). MCRISS is a "web-based, multi-user system that supports the collection, maintenance, inquiry, and reporting of the voluminous data required to effectively manage the activities of Marine Corps Recruiting Command."[89] Information on individuals prospected by OSOs are entered into MCRISS by Social Security Number (SSN) and are captured by TFDW in monthly sequences. MCRISS allows OSOs to track an individual from application to commissioning and to enter pertinent data during the process. This research uses sequences 199 to 259, representing all applicants from all MCRC sources during 1 October 2006 to 30 September 2010.

Using TFDW, sequences 199 to 259 were exported to Microsoft Office Excel (.xls) 2007 to form one longitudinal data set. The resulting longitudinal data set contains multiple duplicate observations as each sequence creates a duplicate observation if an update occurred from the previous sequence. Single observations were developed by merging the most recent sequence information with the sequence in which initial contact occurred, and removing all other duplicate observations. The resulting 32,898 individual observations were formed into fiscal year cohorts containing information on demographic characteristics, recruiting, and eligibility. These areas are discussed in detail following the description of MCTFS data.

b. MCTFS Accession Data

Observations representing fiscal year 2006 through 2010 officer accessions were drawn from a data set exported from MCTFS. As stated in the Marine Corps Military Personnel Procurement Manual: "MCTFS maintains more than 500,000 active, reserve, and retiree records that are available to be processed for pay purposes,

[89] U.S. Marine Corps (2004), Military Personnel Procurement Manual, Volume 2, Enlisted Procurement (MCO P1100.72 MPPM ENLPROC). Washington, DC: Headquarters, Marine Corps.

personnel management or for the production of management reports."[90] While MCTFS is updated daily, TFDW collects snap-shots of monthly reports in each sequence. In concert with the MCRISS dataset, sequences 199 through 259 for company-grade active duty officers were extracted from TFDW.

As with the MCRISS dataset, the resulting longitudinal data set contained multiple observations of the same individual, as well as information on all active duty officers. This present research is interested only in the point when accession to active duty occurred for officers controlled by MCRC selection who shipped to Officer Candidate School (OCS). Duplicate records were deleted by sorting data into fiscal year cohorts by date of appointment. Reserve officers on active duty and officers commissioned through the US Naval Academy (USNA) were removed. The resulting 8,330 observations constitute active duty officer accessions for fiscal year 2006 through 2010.

c. Merged MCRISS/MCTFS Data

Merging MCRISS and MCTFS data produced a data set containing 32,898 MCRC officer applicants and 8,330 active duty officer accessions from fiscal year 2006 to 2010. The initial contact date contained in MCRISS applicant data is the base date for which fiscal year cohorts were formed.

3. Variable Descriptions

Performing statistical analysis and multivariate regressions requires the creation of unique variables from the merged MCRISS/MCTFS data set. The final data set consists of 121 variables and 32,898 observations. The following discussion describes the variables that were created from the merged data set. (A summary description of variables, along with their summary statistics is presented at the end of this section.)

[90] U.S. Marine Corp (2007), Marine Corps Total Force System Personnel Reporting Instructions Manual (MCO P1080.40 MCTFSPRIM) Washington, DC: Headquarters, Marine Corps.

a. Dependent Variable

Accession – this study is concerned with the effect of applicants' characteristics on their selection for commissioning; therefore, the dependent variable is "ACCESSION." All Marine Corps officers receive a lineal control number (LCN) upon commissioning. The accession variable is a binary variable created from the MCTFS "LCN" variable. It assumes a value of one for commissioned officers, and zero otherwise.

b. Independent Variables

Race/Ethnicity Dummy Variables – the merged data set was used to create six unique race/ethnicity dummy variables from the group variable, "RACE6." The merged data set offered four opportunities to enter race and ethnicity information; however, several categories had missing or conflicting reports of Hispanic ethnicity. To minimize missing values for Hispanics, any ethnic category of the four opportunities to respond that indicated positive Hispanic origin were given a value of one, and zero otherwise. Those reporting Mexican, Latin American, Cuban, Puerto Rican, or Other Hispanic Descent that did not also indicate Hispanic origin remained in the White race category. Due to the various reporting opportunities for ethnicity, this method could over- or under-estimate the number of Hispanics in this study.

Binary dummy variables were generated for four race categories (WHITE, BLACK, ASIAN, and OTHER), one ethnic category (HISPANIC) and one "declined to respond" category (DECLINE). As discussed in Chapter II, minorities are under-represented in the officer corps; therefore, the effect on accession of being non-White is expected to be negative and significant.

Gender – the "MALE" variable is generated from the "gender" variable. It assumes a value of one if male and zero otherwise. This study is concerned with the male college-enrolled population, since they are the primary target of officer recruiting. To minimize the risk of double-counting both the effect of being female and being non-White on male accession, women were excluded from the study.

Marital Status – the variable, "MARRIEDOC," is created from the MCRISS variable, "Marital Status Code," and assumes a value of one if married and zero otherwise. This variable represents the most recent TFDW sequence reporting an applicant's marital status prior to accession. Since the present research also studies propensity, and important career or family decisions made by a married couple are influenced by both partners, the estimated effect on accession of being married is expected to be negative.

Age – the variable, "AGE," is calculated as the difference between the applicant's date of birth and the initial contact date as reported by MCRISS. The variable "AGESQUARED" is also created to see if there is a diminishing effect of age. Due to the measurement of age-at-application, and specific age requirements for commissioning, it is expected that an older applicant is more likely to be commissioned; thus, the effect of age is expected to be positive.

Grade Point Average (GPA) – The variable, "contract_gpa," indicates the most recent TFDW sequence of applicant-reported GPA prior to accession. As discussed in Chapter II, MCD boards select applicants they determine are best fit for commissioned service. Due to the competitive nature of the selection process, it is expected that GPA has a positive and significant effect on accession.

Aptitude – the variable, "testscaleconversion," is created by assigning a scale weight to applicant-reported ACT or SAT composite scores in accordance with the Marine Corps Personnel Procurement, Officer Procurement Manual's table of conversion.[91] Several studies, as discussed in Chapter II, find a positive relationship between aptitude and college completion rates. It is therefore expected that the aptitude scale used in this study will have a positive and significant effect on accession.

Unemployment – State unemployment rates for years 2006 through 2010 were extracted from the Bureau of Labor Statistics,[92] imported into STATA as a separate

[91] U.S. Marine Corps (2004), Military Personnel Procurement Manual, Volume 2, Enlisted Procurement (MCO P1100.72 MPPM ENLPROC). Washington, DC: Headquarters, Marine Corps.

[92] U.S. Bureau of Labor and Statistics (2010), http://www.bls.gov/lau/home.htm.

file, and merged with the master data set. This process converted the "unemployment" variable into panel data by fiscal year and OSS. Studies have shown that higher unemployment rates lead to increased college attendance, which would enlarge the QCP. However, high unemployment can also raise the number of applicants who are not highly competitive for commissioned service. Unemployment, therefore, is hypothesized to have a negative and significant effect on accession.

Program Source Dummy Variables – the group variable, "Program," is created from the MCRISS reported "component_code" variable in the data set. Dummy variables were then generated to represent three accession program sources: "OCC," "PLC," and "MCRCOFFPROG." Commissioning source programs are explained in Chapter II. The dummy variable, "MCRCOFFPROG," represents observations that are not recruited by an OSO, but do attend OCS. As discussed in Chapter II, commissioning program sources vary by end-strength mission; however, NROTC and enlisted-to-officer programs have remained relatively constant. Capturing these changes is important, since they influence recruiting strategies.

Prospecting Contact Dummy Variables – Dummy variables are created from the prospecting contact information reported in MCRISS as "Activity_Code" and "Source_Code." From "Activity Code," the following dummy variables are used: "ACTIVITYAC" (area canvass, priority prospect card), "ACTIVITYEM" (electronic mail), "ACTIVITYOT" (office traffic), and "ACTIVITYTC" (telephone call). "Source_Code" indicates the applicant-reported marketing source from which initial contact or interest occurred. From "Source_Code," the following dummy variables are used: "SOURCEAD" (advertising, mail out program, and email), "SOURCEAC" (area canvass), "SOURCECLGFR" (campus presentation, career fair, and display tables), "SOURCEPTAD" (command recruiter, reservist, enlisted recruiting referral, TAD OSO, and poolee), "SOURCEFLY" (flight program), "SOURCEOTH" (other), "SOURCEWWW" (internet), "SOURCETC" (telephone call) and "SOURCEWALK" (walk-in).

High multicollinearity is expected if both sets of dummy variables ("source" and "activity") are used in the same multivariate model; thus, only one set of

variables at a time are used in the present research. Enlisted recruiting studies have shown that area canvassing is the most effective means of attracting enlisted contracts, and is the chosen variable to determine the effect of prospecting to accessions. Based on studies of enlisted recruiting, all activities are expected to have a negative and significant effect on accession as compared to area canvassing.

District Dummy Variables – the MCRISS variable "DIST_ORG_ID" was used to create dummy variables for each of the Marine Corps Districts (MCD): "MCD1" (1st MCD), "MCD4" (4th MCD), "MCD6" (6th MCD), "MCD8" (8th MCD), "MCD9" (9th MCD), "MCD12" (12th MCD) and "MCRC" (all applicants who are not assigned to an OSO or MCD). Applicants coming from MCRC officer programs are highly interested in serving, have already been selected to attend OCS, and receive monetary compensation to complete their baccalaureate degree requirements. Such factors make these applicants the most highly competitive cohort upon which to base accession estimates.

OSS QCP Ratio – the estimated QCP ratio from the Phase 1 model was imported into the merged data set and converted to panel data by OSS, generating the variable, "ossqcpratio." The variable represents the estimated percent of the national QCP in the OSO's area of operation. The ratio is used to capture potential differences in the supply of OSS applicants. Accession of applicants occurs regardless of QCP, so it is unclear what effect this variable will have on accession.

Officer Selection Site Dummy Variables – the MCRISS group variable, "OSS," was used to generate the 70 OSS dummy variables. Between 2006 and 2010, the number of OSOs increased from 71 to 74. MCRISS OSS codes extracted from TFDW sequences indicate 95 separate OSSs. To eliminate redundancy and account for OSO areas of operation, the 95 codes were reduced to 73 OSSs. Three OSSs were combined (Manhattan Lex and Manhattan Broad, North Chicago and South Chicago, and Raleigh East and Raleigh West) due to multiple reporting of a single city OSS code. As with MCD dummy variables, OSSs are compared to MCRC Officer Programs to calculate sample means to determine an appropriate QCP ratio to use for MCRC mission goal-

planning. While the effects of OSS against MCRC officer programs to accession are not used, they are expected to be negative and significant.

Fiscal Year Dummy Variables – the "initial_contact_date" and "status_effective_date" variables were used to generate six dummy variables representing fiscal years 2006 through 2010. Observations were assigned to fiscal year cohorts based on when an OSO indicated initial contact with an applicant occurred, or when an applicant was accepted into an MCRC officer program. The fiscal year cohorts were generated to capture potential differences in all other unobservable factors through the selected time frame. It is estimated that the effect of a fiscal year cohort on accession will diminish over time as requirements have dropped.

c. Variable Summary and Descriptive Statistics

Table 7 provides a descriptive summary of the variables in the study. The table displays the hypothesized effect of each variable as well as variable means and standard deviation.

Table 7. Variable Description and Summary Statistics

Variable Category	Variable Description	Expected Effect	Obs	Mean	Std. Dev.
Dependant Variable					
Accession	Applicant is selected to attend OCS, graduated college and commissions. Binary: =1 if accession, else 0	N/A	34419	0.2862	0.4520
Independent Variables					
WHITE	=1 if White, else 0	Control	34419	0.7925	0.4055
ASIAN	=1 if Asian, else 0	Negative	34419	0.0389	0.1933
BLACK	=1 if Black, else 0	Negative	34419	0.0508	0.2195
OTHER	=1 if Other race/ethnicity, else 0	Negative	34419	0.0267	0.1612
HISPANIC	=1 if Hispanic, else 0	Negative	34419	0.0736	0.2611
DECLINE	=1 if declined to respond, else 0	Negative	34419	0.0044	0.0663
Male	=1 if male, else 0	Positive	33955	0.8982	0.3024
MarriedOC	=1 if married, else 0	Negative	31652	0.0779	0.2680
Age Applicant	= Age at application	Positive	33808	23.3317	3.0048
Contract_gpa	= self-professed GPA from most current TFDW sequence prior to accession (0 to 4.5)	Positive	23667	2.8858	0.7739
Test Scale Conversion	= Self-reported SAT or ACT scores from most current TFDW sequence converted to MCRC test scale (1 - 10)	Positive	13120	5.4572	1.6689
Unemployment	=State unemployment rates from 2006 to 2010 converted to panel data by year and OSS	Negative	34419	6.6792	2.5179
MCRC	=1 if contracted program, else 0	Control			
OCC	=1 if contracted program, else 0	Negative	34419	0.3332	0.4714
PLC	=1 if contracted program, else 0	Negative	34419	0.5057	0.5000
ACTIVITYAC	=1 if prospected through Area Canvassing, else 0	Control			
ACTIVITYEM	=1 if prospected through Electronic Mail, else 0	Negative	34419	0.0666	0.2494
ACTIVITYOT	=1 if prospected through Office Traffic, else 0	Negative	34419	0.1497	0.3568
ACTIVITYTC	=1 if prospected through Telephone Call, else 0	Negative	34419	0.3719	0.4833
SOURCEAC	=1 if sourced via Area Canvassing, else 0	Control			
SOURCETELE	=1 if sourced via telephone, else 0	Negative	34419	0.1391	0.3460
SOURCECLGFR	=1 if sourced via college presentation, career fair, or display booth, else 0	Negative	34419	0.0725	0.2593
SOURCEPTAD	=1 if sourced via enlisted recruiting, command recruiter, poolee, OSO PTAD, else 0	Negative	34419	0.1011	0.3015
SOURCEFLY	=1 if sourced via flight program, else 0	Negative	34419	0.0032	0.0567
SOURCEWWW	=1 if sourced via internet, else 0	Negative	34419	0.1694	0.3751
SOURCEADS	=1 if sourced via print, TV, radio, or mail advertising, else 0	Negative	34419	0.0633	0.2436
SOURCEWALK	=1 if sourced via walk-in office traffic, else 0	Negative	34419	0.0537	0.2255
MCRC	=1 if NROTC, MECEP, ECP, MCP or USNA, else 0	Control	34419	0.1602	0.3668
MCD1	=1 if Applicant in 1st MCD, else 0	Negative	34419	0.1640	0.3702
MCD4	=1 if Applicant in 4th MCD, else 0	Negative	34419	0.1561	0.3629
MCD6	=1 if Applicant in 6th MCD, else 0	Negative	34419	0.1027	0.3036
MCD8	=1 if Applicant in 8th MCD, else 0	Negative	34419	0.1383	0.3452
MCD9	=1 if Applicant in 9th MCD, else 0	Negative	34419	0.1450	0.3521
MCD12	=1 if Applicant in 12th MCD, else 0	Negative	34419	0.1336	0.3402
ossqcpratio	=QCP estimate of college population	Unknown	34418	0.0128	0.0084
FY06	=1 if FY2006 applicant, else 0	Control	34419	0.3120	0.4633
FY07	=1 if FY2007 applicant, else 0	Positive	34419	0.1223	0.3277
FY08	=1 if FY2008 applicant, else 0	Positive	34419	0.1431	0.3502
FY09	=1 if FY2009 applicant, else 0	Positive	34419	0.1878	0.3906
FY10	=1 if FY2010 applicant, else 0	Negative	34419	0.2347	0.4238

B. PRELIMINARY ANALYSIS

This section presents a preliminary analysis of the data sets used in the study. Analysis of the data set used in Phase 1 begins with an examination of the number of full-time college-enrolled males, average graduation rates, and average test scores by college, plus national propensity to serve by race/ethnicity for the 1,088 schools in the study. Next, analysis of the data set used in Phase 2 and 3 observes current officer applicant and accession production in the form of distribution rates of key variables for the 32,898 observations in the sample. Additionally, tables are provided at the end of the section showing descriptive summary statistics on all variables with their number of observations, mean, standard deviation, and minimum and maximum values.

1. Propensity-Weighted Qualified Candidate Population (PW-QCP)

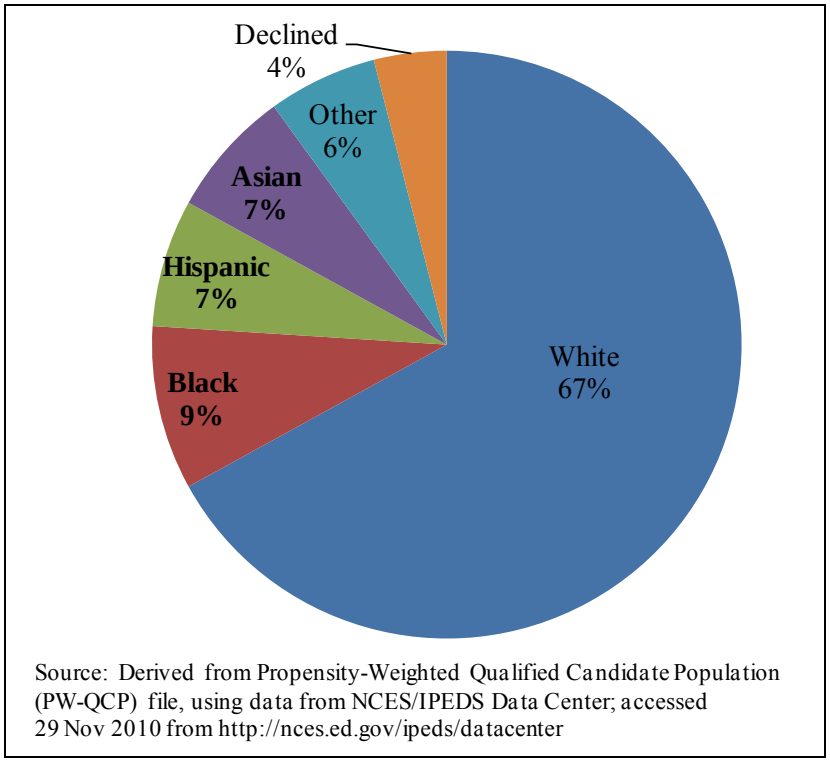
Marine Corps Recruiting Command structures its officer recruiting efforts based on the QCP of the college market. The Center for Naval Analyses defines QCP as: "The estimated number of male, aptitude-test-score-qualified, full-time baccalaureate-degree-enrolled individuals who come from accredited colleges or universities of 400 or more full-time enrollees."[93] Estimates of QCP are derived from CNA's model using DOE data that evaluates full-time enrollment, graduation rates, and test-score qualification rates by college. The present study employs a similar approach by using DOE data, converting test-score qualification rates based on MCRC guidelines for aptitude test score conversions. However, this study differs from the CNA approach by using JAMRS propensity rates by race/ethnicity to estimate propensity-weighted QCP (PW-QCP) down to the OSS level. The following sections provide summary results for the 1,088 colleges used in the present study.

a. Full-Time Male Enrollment

Total full-time enrollment for the 2007–2008 school year, based on the 1,088 schools used in this study, is 5,943,684 students. Of these students, 54 percent were female, leaving 46 percent of the total college population for use in PW-QCP

[93] Laura J. Kelley, *Update of Marine Corps Officer Recruiting Structure Study*.

estimates. Figure 2 shows the race/ethnicity distribution of the 2,735,379 full-time college males used in this study. As discussed in Chapter II, the Marine Corps would like to have its officer corps reflect the diversity of the nation. MCRC reported the 2009 USMC officer accession composition as 4 percent Black, 7 percent Hispanic and 3 percent Asian. According to estimates of the college population in this study, Blacks (who are 9 percent of U.S. college population) and Asians (who are 7 percent of the U.S. college population) are under-represented, without considering potential for graduation, military eligibility, or propensity to serve. This leads to the preliminary analysis of estimated graduation rates.



Source: Derived from Propensity-Weighted Qualified Candidate Population (PW-QCP) file, using data from NCES/IPEDS Data Center; accessed 29 Nov 2010 from http://nces.ed.gov/ipeds/datacenter

Figure 2. Percentage Distribution of Male Full-time Enrolled College Students in the Sample, by Racial/Ethnic Group, Academic Year 2007–2008

b. College Graduation Rates

The second component of the PW-QCP model involves estimating the graduation rate at each of the 1,088 schools. Graduation rates are derived through IPEDS by calculating the total number of institution-reported baccalaureate degrees conferred within six years of matriculation. Findings from the 2004/09 Beginning Postsecondary

Students Longitudinal Study, conducted by NCES, suggest that "among 2003–04 beginning students who first enrolled in a 4-year institution, 58 percent had received a bachelor's degree…within 6 years from any institution."[94] Once an individual becomes an officer applicant, however, that person commits to completing baccalaureate requirements within four years.[95] This study uses IPEDS six-year graduation rates, implying that the probability of an individual graduating falls within the reported rates once an individual commits to the application process.

Figure 3 shows the six-year graduation rates of male college students from the 1,088 institutions in this research. The estimates suggest that minority undergraduate students are less likely to earn a baccalaureate degree in six years than their White counterparts. This estimate of potential graduates is then used as the base for calculating the numbers of students who will have the necessary aptitude (test) scores.

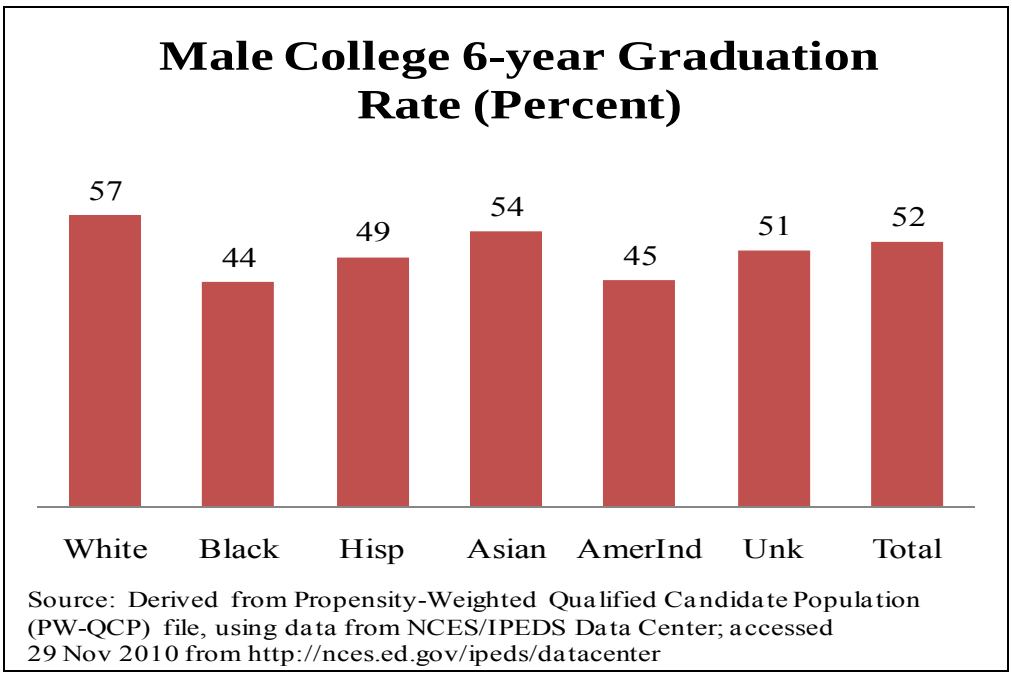


Figure 3. Percentage of Male College Students in Sample Population Who Graduate Within 6 Years of Matriculation, by Racial/Ethnic Group, Fiscal Years 2006–2010

[94] A. W. Radford, L. Berkner, S. C. Wheeless, and B. Shepherd, "Persistence and Attainment of 2003–04 Beginning Postsecondary Students: After 6 Years (NCES 2011–151)." U.S. Department of Education. Washington, DC: National Center for Education Statistics, 2010. Accessed 2 March 2011 from http://nces.ed.gov/pubsearch

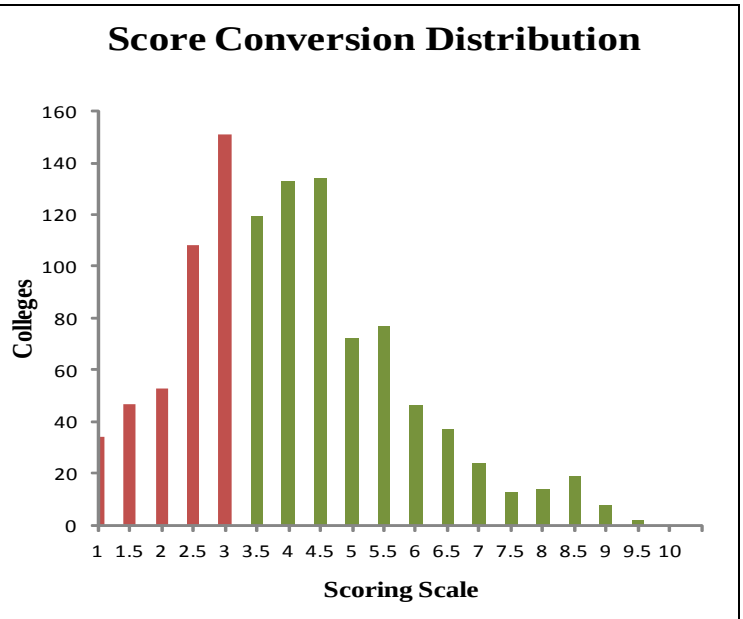
[95] MCO P1050.63. MPPM OFFPROG.

c. Distribution of Average College Accepted Aptitude Scores

The most rigid qualification in determining eligibility for commissioning in the Marine Corps is meeting aptitude standards based on ACT or SAT composite scores. By identifying average enrollment aptitude qualification rates, OSOs can isolate colleges that meet Marine Corps minimum score requirements of 22 on the ACT or 1000 on the SAT.[96] Using MCRC's conversion scoring, Figure 4 displays the distribution of average aptitude scores among the study's colleges.

Given Marine Corps applicant selection guidelines, conversion scores 3.5 and above meet commissioning requirements. The average aptitude scores of students at 36% of the schools used in this study fail to meet the minimum Marine Corps requirements. Omitting nearly 400 schools would limit the significance of the QCP model and cause an over-estimation of OSO goals in aptitude-rich areas, and are therefore left in the study.

Scale	ACT Combine	SAT (Verb+Math)
1	<18	<859
1.5	18	860-899
2	19	900-939
2.5	20	940-979
3	21	980-1019
3.5	22	1020-1049
4	23	1050-1089
4.5	24	1090-1129
5	25	1130-1169
5.5	26	1170-1209
6	27	1210-1249
6.5	28	1250-1289
7	29	1290-1329
7.5	30	1330-1359
8	31	1360-1399
8.5	32	1400-1439
9	33	1440-1489
9.5	34	1490-1539
10	35	1540-1590



Source: Derived from NCES/IPEDS Data Center and MCO P1050.63 MPPMOFFPROC

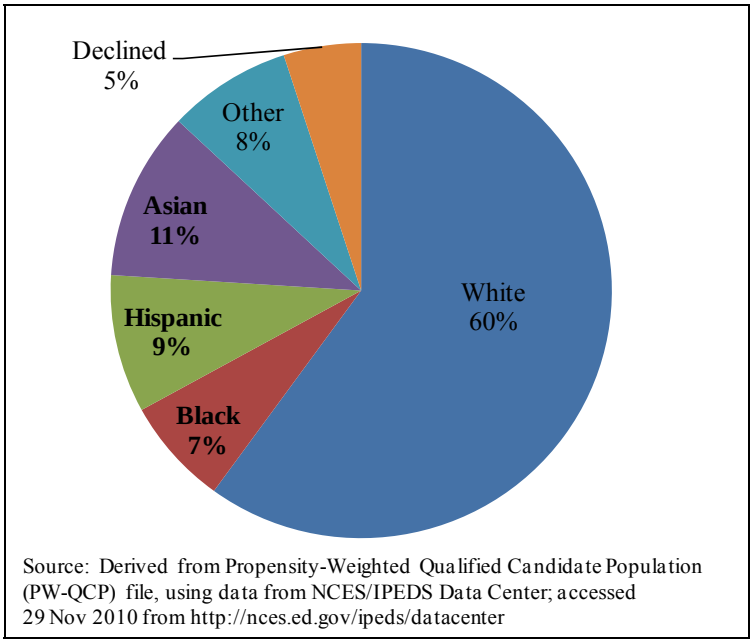
Figure 4. Distribution of Average ACT and SAT Scores, with Marine Corps Recruiting Command (MCRC) Conversions, for Colleges in this Study, Academic Year 2007–2008

[96] MCO P1050.63. MPPM OFFPROC.

d. Propensity to Serve

The final factor in the estimation of PW-QCP is based on the propensity to join the military. As discussed in Chapter II, JAMRS conducted a Minority Officer Study that derived estimates of propensity for serving in the military. These propensities, by racial/ethnic group, are: 6 percent for white, 10 percent for black, 11 percent for Hispanic, and 8 percent for Asian. It should be noted that propensity estimates vary from time to time by region, geographic area, proximity to military installations, veteran population, National events, unemployment, and many other factors. However, omitting a propensity variable inflates the basic QCP estimates and does not take into account the relatively small portion of the population who are interested in the armed forces.

Figure 5 shows the racial/ethnic composition of the male, eligible college population based on estimates derived from this PW-QCP model. This preliminary analysis estimates that, from over 2.7 million male, full-time college-enrolled students, just over 66,000 comprise the PW-QCP who will graduate from college, meet the Marine Corps' minimum aptitude requirements, and also have a positive propensity to serve in the military.



Source: Derived from Propensity-Weighted Qualified Candidate Population (PW-QCP) file, using data from NCES/IPEDS Data Center; accessed 29 Nov 2010 from http://nces.ed.gov/ipeds/datacenter

Figure 5. Percentage Distribution of Male, Full-time College Students in the Sample, Weighted by Propensity to Serve in the Military, by Racial/Ethnic Group, Fiscal Years 2006–2010

2. Applicant to Accession Data Set Analysis

The data set used in Phases 2 and 3 was created by merging TFDW information maintained in MCRISS and MCTFS to evaluate MCRC accession production and estimate minority submission goals at the OSO level. The mean values presented for dummy variables in the descriptive summary statistics are the percent of the population in the group from which it was derived, and are used to confirm that the observations were reliably recorded. The following analysis provides an examination of the distribution of the key explanatory variables for observations of applicant-to-accession production by race/ethnicity, aptitude test scores, District diversity production, and OSO source of application to ensure that this study's data correspond to reported officer recruiting efforts.

a. Distribution by Race/Ethnicity

A preliminary analysis of the average five-year applicant-to-accession production will determine if this study's sample is comparable to reported accession rates. Figure 6 shows the distributions of applicants and accessions of the sample by racial/ethnic groups. The results are nearly identical to those in MCRC reports and the average calculated from the 2006–09 officer statistics in DoD's report on *Population Representation of the Military Services.*[97] This indicates that the sample is representative of actual Marine Corps applicant and accession populations.

[97] U.S. Department of Defense. *Population Representation in the Military Services FY2002–2008.* Washington, DC: Office of the Under Secretary of Defense for Personnel and Readiness, 2010.

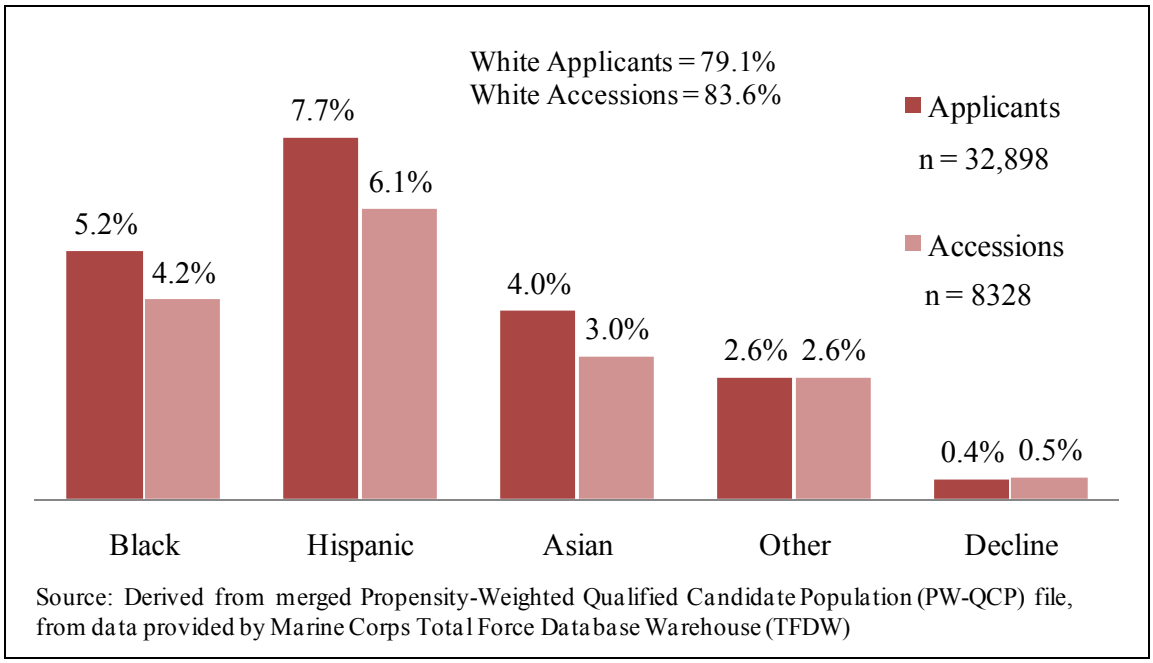


Figure 6. Percentage of Population Who are Marine Corps Officer Applicants and Accessions, by Racial/Ethnic Group, Fiscal Years 2006–2010

b. Distribution by Aptitude Scale by Race/Ethnicity

Figure 7 shows the distribution of applicant-reported ACT or SAT scores, in the sample. Only 36 percent of the individuals had ACT or SAT scores reported in MCRISS. As stated previously, the minimum test conversion score for commissioning is 3.5. In place of the ACT or SAT, applicants have the opportunity to take the ASVAB and achieve a minimum AFQT score of 74. These scores are not reliably recorded in either MCRISS or MCTFS for use in this study. As the minimum scores for aptitude are a non-waiverable requirement for commissioning, they must be recorded by the OSO elsewhere, or only upon commissioning, in which case a presumed gap between MCRISS and MCTFS reporting occurs.

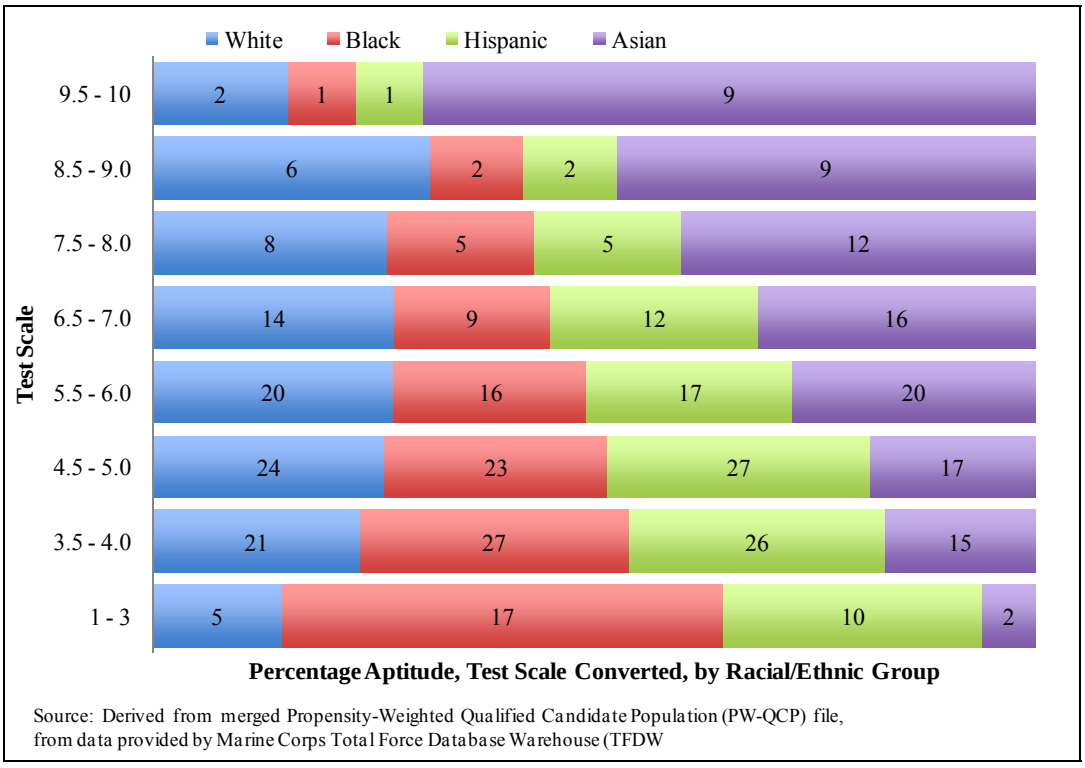


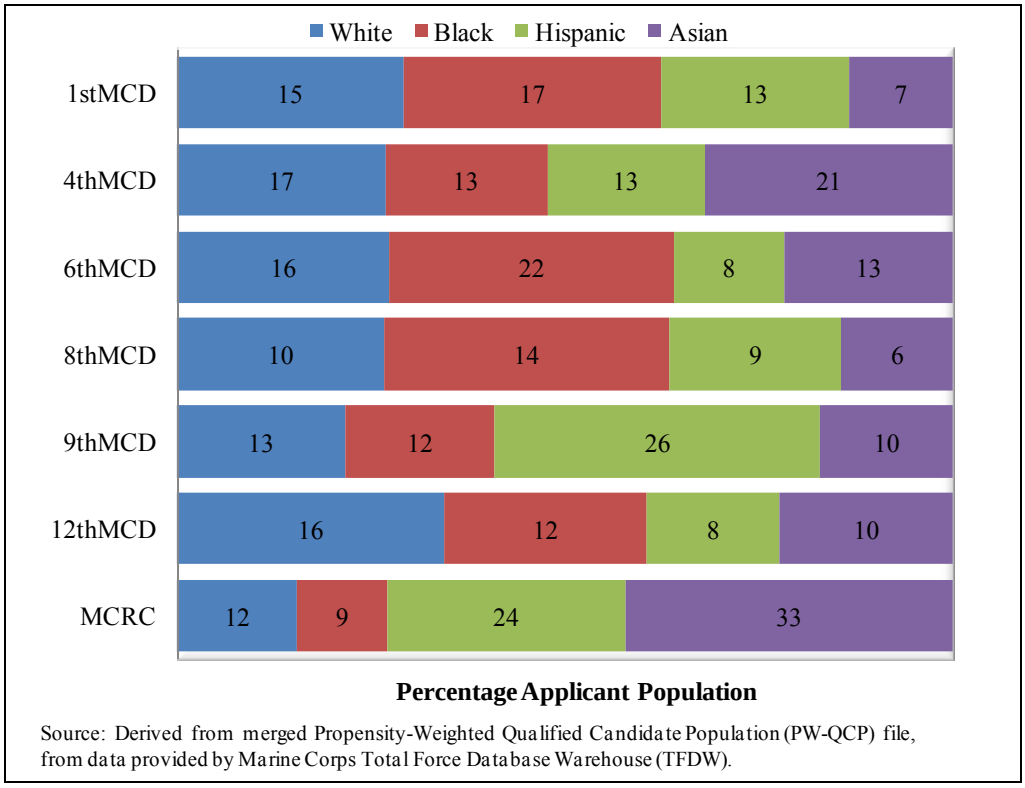
Figure 7. Percentage Sample Population Aptitude Score through Marine Corps Applicant Test Scale Conversion, by Racial/Ethnic Group, Academic Year 2007–2008

Previous studies on the validity of the ACT and SAT have reported that, on average, Blacks tend to score lower than Whites, and Asians tend to score higher than all other races. The results for the sample follow this pattern. A majority of self-reported aptitude scores by Black men in the sample population are below the Marine Corps' scoring threshold of 3.5. This compares with Asian men in the sample, who report relatively high scores.

c. Race/Ethnicity Distribution by Marine Corps District

Figure 8 shows the percentage distribution of officer applicants by racial/ethnic group for each MCD. This analysis facilitates a comparison of applicant submission goals with the MCD's racial/ethnic group population. For example, enlisted recruiting studies show that Southern states (6th MCD) have larger Black populations and

produce a larger share of Black enlistees.[98] This corresponds to the sample's larger number of Black applicants in the 6th MCD. A comparable trend is found for Hispanics in the 9th MCD, as a larger proportion of this group live in the states of Texas, New Mexico, and Arizona. Based on this distribution, the applicant sample is likely to be representative of the population of MCDs with respect to race/ethnicity.



Source: Derived from merged Propensity-Weighted Qualified Candidate Population (PW-QCP) file, from data provided by Marine Corps Total Force Database Warehouse (TFDW).

Figure 8. Average Percentage of Applicant Diversity by Marine Corps District (MCD) and Marine Corps Recruiting Command (MCRC) Officer Programs, by Racial/Ethnic Group, Fiscal Years 2006–2001

d. Distribution by Source of Application

The final variable examined in this preliminary analysis is the sample's source of marketing contact. Table 8 shows the percentage distribution by MCD for nine

[98] David Armor and Curtis Gilroy, "Changing Minority Representation in the U.S. Military." *Armed Forces & Society* 36, no. 2 (January 2010): 223–246. Doi:10.1177/0095327X09339900. Accessed 12 Jan 2010 from http://mldc.whs.mil/download/documents/News%20Articles/Armor-Gilroy%20AFS.pdf.

coded marketing sources that initially attracted applicants to the Marine Corps. Reporting of "area canvassing" is highest throughout the recruiting districts, followed by the Internet.

Table 8. Average Percentage Distribution of Marine Corps Officer Applicants in the Sample by Marketing Source with Marine Corps Recruiting District (MCD), Fiscal Years 2006–2010

	1st MCD	4th MCD	6th MCD	8th MCD	9th MCD	12th MCD
Area Canvas	26	17	43	26	16	21
Telephone	15	20	10	19	16	19
C/C Fair	9	5	9	8	11	11
PTAD	8	11	14	11	16	13
Flight	0	0	0	1	1	0
Internet	18	27	12	20	21	24
Advertising	15	12	1	3	9	3
Walk-In	5	5	8	9	5	5
Other	4	4	2	3	5	2
Total	100	100	100	100	100	100

Source: : Derived from merged Propensity-Weighted Qualified Candidate Population (PW-QCP) file, from data provided by Marine Corps Total Force Database Warehouse (TFDW).

C. CHAPTER CONCLUSION

This chapter describes the origin of the data used in both phases of the study and presents a preliminary examination of research variables. The formation of the Phase 1 data set combines 2008 IPEDS institutional-level data on 1,088 schools with JAMRS MOS propensity to serve ratios to create a data file in which to estimate propensity-weighted QCP. The Phase 2 and 3 data set merges fiscal years 2006 through 2010 officer applicant and active duty accession demographic and application data (extracted from MCRISS and MCTFS housed within TFDW) into STATA 10.1 to form a master applicant-to-accession data set. The preliminary analysis of the data supports including variable observations in PW-QCP and minority submission goal models used in this thesis.

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IV. METHODOLOGY AND RESULTS

A. INTRODUCTION

This chapter presents the methodology and results of the study in four sections. The first section describes the method used to derive propensity-weighted QCP (PW-QCP) estimates and presents selected results. The second section re-evaluates the summary statistics of the MCRISS/MCTFS data set as it relates to PW-QCP estimates. The third section discusses the specification of the multivariate probit model and then presents results. The final section discusses the applicability of the probit model in predicting the probability of minority officer accessions.

B. PHASE 1: QUALIFIED CANDIDATE POPULATION

As discussed in Chapter II, the Marine Corps is dedicated to ensuring that its officer corps reflects the demographic composition of the nation it defends. However, the types of people who apply for, or are qualified for, commissioned service are affected by a number factors, including academic performance, age, aptitude test scores, body composition, character, citizenship, dependency, education, medical conditions, moral character, and physical fitness.[99] Allocating submission goals based on all of these criteria would hinder OSO productivity, since all of their time would be consumed identifying and prospecting candidates. A basic model of PW-QCP serves a broad goal allocation function more efficiently and provides OSOs with data on specific institutions in their area of operation.

1. Methodology

This thesis replicates and modifies the approach developed by the Center for Naval Analyses (CNA) to analyze the potential officer candidate market. This study's QCP model is based on data on college enrollment, graduation rates, average acceptance test scores, as in the CNA approach. However, this study also estimates propensity weights to the QCP numbers. The method produces a QCP estimate, by race/ethnicity,

[99] MCO P1050.63. MPPM OFFPROC.

for each of the 1,088 colleges in the data set. The first measure is the 2007–2008 male, full-time college population, by race/ethnicity. The second measure is the reported 2007 graduation rates for each institution for the 2001-2006 6-year cohort, by race/ethnicity. The third measure is the reported median composite ACT or SAT scores for the incoming 2007 freshman class, which is converted to a 10-point scale used by MCRC.[100] The final measure uses national propensity-to-serve results by race/ethnicity from JAMRS MOS and is unique to this study.

The male college population is reduced by multiplying it by the graduation rate. This results in a measure that reflects the population of college males that potentially will complete baccalaureate requirements. This population is multiplied by average aptitude score rates, which limits the prospective college graduates to those who would likely meet Marine Corps commissioning test score requirements. This is the extent of the measures previously used by CNA to estimate QCP. However, this thesis also adjusts the QCP measure for military propensity. The last step involves multiplying QCP population by propensity rates to derive the final PW-QCP model.

The PW-QCP model is based on the following calculation:

$QCP_i = \sum(E_{ir})(G_{ir})(A_i)(P_r)$,

Where,

E_{ir} = estimated population of male, full-time enrolled college students, by institution, by race/ethnicity

G_{ir} = estimated ratio of graduating males each year, by institution, by race/ethnicity

A_i = estimated ratio of male aptitude qualified students, by institution

P_r = estimated ratio of propensity to serve in the military, by race

i = 1,..., 1,088 baccalaureate awarding institutions

r = 1,..., 7 categories of race

[100] MCO P1050.63. MPPM OFFPROC.

2. Results

The model results in a much smaller PW-QCP estimate from which OSOs can prospect than the CNA QCP approach. However, the model can be used in various ways to assist officer recruiting. The following sections describe PW-QCP results by state, district and OSS. The Appendix contains the construction of the PW-QCP numbers for the 1,088 institutions used in the present study.

a. PW-QCP by State

According to the 2005 CNA study of QCP, minorities constitute the following proportions of the QCP: 6 percent Black, 5 percent Hispanic, and 8 percent Asian.[101] Results from the present study estimate national minority PW-QCP as 7 percent Black, 9 percent Hispanic, and 11 percent Asian. U.S. Census data for 2009 indicate that the proportion of minority 18-34 year old men with a bachelor's degree include the following: 7 percent Black, 8 percent Hispanic and 17 percent Asian.[102] This more closely matches this model's PW-QCP estimate than it does the CNA model. The notable exception is the proportion of Asian men, which is much higher in the Census than in either CNA or this study's QCP estimates.

Table 9 presents the QCP numbers by race/ethnicity by state. The states with the highest density of degree-granting schools are New York (87), Pennsylvania (87) and California (61). The following details the top three states for Blacks, Hispanics, and Asians in relation to state QCP population:

- Black's: Mississippi (25 percent, 11 schools), Georgia (19 percent, 25 schools) and South Carolina (16 percent, 23 schools),
- Hispanics: New Mexico (45 percent, 5 schools), Florida (23 percent, 28 schools), and Texas (23 percent, 52 schools),

[101] Laura J Kelley, *Update of Marine Corps Officer Recruiting Structure Study*. Alexandria, VA: Center for Naval Analyses, 2005.

[102] U.S. Census Bureau, "Educational Attainment in the United States: 2009." Accessed 14 Dec 2010 at http://www.census.gov/hhes/socdemo/education/data/cps/2009/tables.html.

- Asians: Hawaii (64 percent, 5 schools), California (30 percent, 61 schools) and Washington (16 percent, 16 schools).

Table 9. Percent Distribution of PW-QCP in Sample by Racial/Ethnic Group and State, Fiscal Years 2006–2010

State	Schools	Proportion of PW-QCP by State, by Racila/Ethnic Group							
		White	Black	Hispanic	Asian	AmerInd	Unk[a]	No Resp[b]	Total
AK	2	67	4	4	7	7	4	7	100
AL	22	73	16	2	2	1	2	3	100
AR	12	74	10	4	2	2	2	7	100
AZ	5	58	4	19	7	1	6	5	100
CA	61	32	4	19	30	1	9	5	100
CO	15	68	3	10	6	1	8	3	100
CT	18	55	8	9	8	0	15	5	100
DC	6	50	13	8	8	0	12	9	100
DE	3	73	9	8	6	1	2	2	100
FL	28	51	11	23	6	1	4	4	100
GA	25	57	19	5	12	0	2	5	100
HI	5	18	2	2	64	0	1	13	100
IA	22	79	3	4	3	0	4	6	100
ID	4	82	0	7	2	1	4	3	100
IL	39	59	6	9	13	0	6	6	100
IN	38	74	6	5	5	0	2	8	100
KS	10	76	4	5	3	1	6	5	100
KY	20	81	8	2	2	0	3	3	100
LA	16	69	13	5	3	1	4	4	100
MA	45	53	6	8	10	0	14	8	100
MD	18	54	16	6	14	0	6	3	100
ME	9	79	4	5	6	1	1	4	100
MI	33	70	6	4	7	1	6	6	100
MN	26	76	4	3	6	1	4	6	100
MO	31	70	8	4	5	1	7	5	100
MS	11	67	25	2	1	0	2	2	100
MT	7	81	0	2	2	2	7	7	100
NC	38	66	14	5	7	1	4	3	100
ND	5	89	3	1	2	1	1	3	100
NE	9	77	3	5	4	1	6	4	100
NH	8	65	5	5	7	2	12	4	100
NJ	24	50	9	13	17	0	7	4	100
NM	5	36	3	45	4	3	5	4	100
NV	2	48	5	14	16	1	12	5	100
NY	87	50	7	9	12	0	14	7	100
OH	46	76	7	3	5	0	5	4	100
OK	15	65	7	5	4	9	2	8	100
OR	14	61	3	7	10	1	13	6	100
PA	87	68	7	5	8	0	7	5	100
RI	8	57	5	7	8	0	16	6	100
SC	23	70	16	3	2	0	8	2	100
SD	8	86	2	1	2	1	8	1	100
TN	28	71	13	4	4	0	5	3	100
TX	52	52	7	23	11	1	1	5	100
UT	6	79	1	6	5	1	5	4	100
VA	30	62	12	5	9	0	7	4	100
VT	8	81	2	4	5	0	4	4	100
WA	16	58	4	7	16	1	9	5	100
WI	25	82	3	4	4	1	1	5	100
WV	12	85	6	3	2	0	1	2	100
WY	1	75	2	3	2	0	12	6	100
ALL	1088	60	7	9	11	1	7	5	100

Source: Derived from Propensity-Weighted Qualified Candidate Population (PW-QCP) file, using data from NCES/IPEDS Data Center; accessed 29 Nov 2010 from http://nces.ed.gov/ipeds/datacenter

[a] Student did not identify a racial/ethnic group or can not be determined from data source

[b] Students declined to respond to questions of race/ethnicity.

b. PW-QCP by District

Table 10 summarizes the estimates of QCP by MCD. The 1st MCD (Northeast) most closely matches the U.S. Census college graduate population, most likely due to the density of schools and diversity of the overall population. Consistent with literature reviewed in Chapter II, the 6th MCD (Southeast) retains the largest proportion of Black QCP (15 percent), followed by the 4th MCD (11 percent). The largest proportion of Hispanic QCP is estimated in the border states of 8th MCD (18 percent). At the same time, the 12th MCD (West) also shows a high proportion of Hispanic (15 percent) as well as Asian (24 percent) QCP.

Table 10. Percentage Distribution of PW-QCP in Sample by Racial/Ethnic Group and Marine Corps District (MCD), Fiscal Years 2006–2010

MCD	Schools	White	Black	Hispanic	Asian	AmerInd	Unknown	No Resp	All
1	27	57	7	8	11	0	11	6	26
4	16	66	11	5	8	0	6	4	15
6	15	61	15	10	6	0	4	4	13
ERR[a]	58	61	10	8	9	0	8	5	55
8	10	57	6	18	8	2	3	5	10
9	21	73	5	5	6	1	4	6	19
12	11	43	4	15	24	1	8	5	16
WRR[b]	42	59	5	12	13	1	6	5	45
Total	100	60	7	9	11	1	7	5	100

Source: Derived from Propensity-Weighted Qualified Candidate Population (PW-QCP) file, using data from NCES/IPEDS Data Center; accessed 29 Nov 2010 from http://nces.ed.gov/ipeds/datacenter

[a] Eastern Recruiting Region

[b] Western Recruiting Region

c. PW-QCP by OSS

Apportionment of QCP by OSS is accomplished through the institution's zip codes, which are matched with the 71 OSSs. Table 11 presents QCP estimates by OSS. The results indicate that most of the minority QCP proportions occur within certain OSS area of operations. For example, Hispanic QCP in the 6th MCD is estimated to be 10 percent; however, 43 percent of that population is located in OSS Miami. This implies that an OSO in Tuscaloosa would have a significantly more difficult time prospecting a Hispanic candidate than an OSO in the Miami area, if submission goals were distributed evenly throughout the district.

Table 11. Percentage Distribution of PW-QCP in the Sample by Racial/Ethnic Group and Officer Selection Station (OSS), Fiscal Years 2006–2010

OSS	Racial/Ethnic Group (Percent)				
	White	Black	Hispanic	Asian	All
Albany	66	5	7	7	7
Amherst	61	6	7	7	7
Boston	45	6	9	12	10
Buffalo	61	6	4	7	6
Durham	71	4	5	6	4
Garden City	39	10	11	17	4
Manhatten Broad	53	9	13	7	5
Manhatten Lex	37	8	15	20	10
New Jersey	54	8	11	18	6
Philadelphia	54	9	7	12	8
Pittsburg	70	6	3	8	6
Providence	60	6	8	8	7
Reading	77	5	5	3	5
State College	79	5	5	6	6
Syracuse	51	5	7	12	8
Total 1st	57	7	8	11	48
Ann Arbor	59	6	5	12	9
Cincinnati	80	5	3	3	6
Columbus	77	7	3	4	13
Fairfax	60	13	6	9	7
Hyattsville	54	14	7	12	11
Kent	73	6	3	6	7
Lexington	80	8	2	2	5
Newark	60	13	7	13	7
Raleigh East	63	13	5	10	9
Raleigh West	68	15	5	5	8
Richmond	58	16	5	9	12
Roanoke	70	6	4	7	7
Total 4th	66	11	5	8	28
Atlanta	60	29	4	3	1
Baton Rouge	66	17	5	3	10
Charlotte	72	14	3	3	9
Columbia	66	18	4	3	6
Gainsville	57	13	17	8	11
Miami	30	11	43	5	7
Nashville	69	14	4	4	13
Norcross	57	16	6	14	15
Orlando	54	11	17	7	12
Tallahassee	61	17	15	3	6
Tuscaloosa	76	16	2	2	11
Total 6th	61	15	10	6	24
Total Eastern Recruiting Region	61	10	8	9	54

Table 11. (continued)

OSS	Racial/Ethnic Group (Percent)				
	White	Black	Hispanic	Asian	All
Arlington	60	10	12	9	17
Austin	43	5	31	13	19
College Station	66	6	19	5	11
Denver	67	3	10	7	11
Fort Collins	73	3	8	3	6
Houston	34	13	22	21	6
Lubbock	59	4	27	3	7
Norman	65	7	5	5	10
Phoenix	59	4	17	7	8
Tucson	45	3	34	5	6
Total 8th	57	6	18	8	22
Champaign	64	6	8	11	10
East Lansing	76	6	4	4	10
Indianapolis	74	5	4	5	6
Iowa City	79	3	4	4	8
Kansas City	75	5	5	3	6
Lafayette	74	6	6	5	9
Lincoln	79	2	4	3	5
Milwaukee	81	3	5	4	11
North Chicago	58	7	8	15	5
South Chicago	49	5	13	15	6
Springfield	77	6	4	3	7
St Louis	64	11	4	7	5
Twin Cities	79	3	2	5	13
Total 9th	73	5	5	6	42
Berkeley	30	3	16	34	14
Corvallis	61	3	6	10	6
Los Angeles Team 4	45	4	24	17	4
Los Angeles Team 1	33	5	19	29	14
Orange	24	3	19	42	10
Riverside	29	6	25	25	7
Sacramento	37	3	17	29	7
Salt Lake City	80	1	6	5	10
San Diego	30	3	18	35	8
San Jose	44	6	17	17	6
Seattle	54	4	7	21	8
Spokane	72	2	6	5	6
Total 12th	43	4	15	24	36
Total Western Recruiting Region	59	5	12	13	46
Total MCRC	60	7	9	11	1

Source: Derived from Propensity-Weighted Qualified Candidate Population (PW-QCP) file, using data from NCES/IPEDS Data Center; accessed 29 Nov 2010 from http://nces.ed.gov/ipeds/datacenter.

C. PHASE 2: APPLICANT AND ACCESSION PRODUCTION, FISCAL YEARS 2006–2010

The following sections discuss using recent applicant and accession data to validate the PW-QCP estimates developed by the study's model.

1. Methodology

As described in Chapter III, the summary statistics from the MCRISS/MCTFS data depict the variables average in the sample data. For binary variables, the mean represents the percent of the total sample. For instance, using the summary statistics from the MCRISS/MCTFS data file, 25.3 percent of the 32,898 individual applicants became an officer accession at some point between 2006 and 2010. In other words, the summary statistics show that, in a five-year sample, one in every four applicants end up being commissioned.

The present study's QCP estimate was compared with the five-year average applicant data from the MCRISS/MCTFS data file, and with the 2008–2010 MCRC allocated district goals. This comparison helps to determine the usefulness of the study's model in allocating PW-QCP-based share of MCD minority officer submission goals.

2. Results

Examining the applicant summary statistics from the five-year MCRISS/MCTFS data file against the PW-QCP estimates and the 2008–2020 MCRC-allocated district submission goals facilitates evaluating the QCP model and MCRC recruiting strategies. As explained in Chapter II, the selection of applicants to attend OCS is done at the district level. The selection process ensures that only high-quality candidates are chosen, based on the "whole-person" concept, and regardless of published minority submission goals. For brevity (and the fact that goal allocation is distributed by MCRC), the comparison focuses on the District level for Black, Hispanic and Asian racial/ethnic groups.

a. Black Applicants

As discussed in Chapter II, all minority groups are under-represented in the Marine Corps officer community. The Black share of the applicant population receives more attention than that of any other racial/ethnic group. Figure 9 compares summary statistics from the MCRISS/MCTFS data to the PW-QCP estimates and to MCRC district submission goals for 2008 through 2010. The results show that the sample's proportion of Black applicants is lower than PW-QCP estimates for the Eastern Recruiting Region, meaning that region's goals and recruiting efforts can be raised. The Western Recruiting Region's Black QCP estimates are nearly on par with the sample's average applicant; however, their submission goals are higher than the eligible Black population in the region.

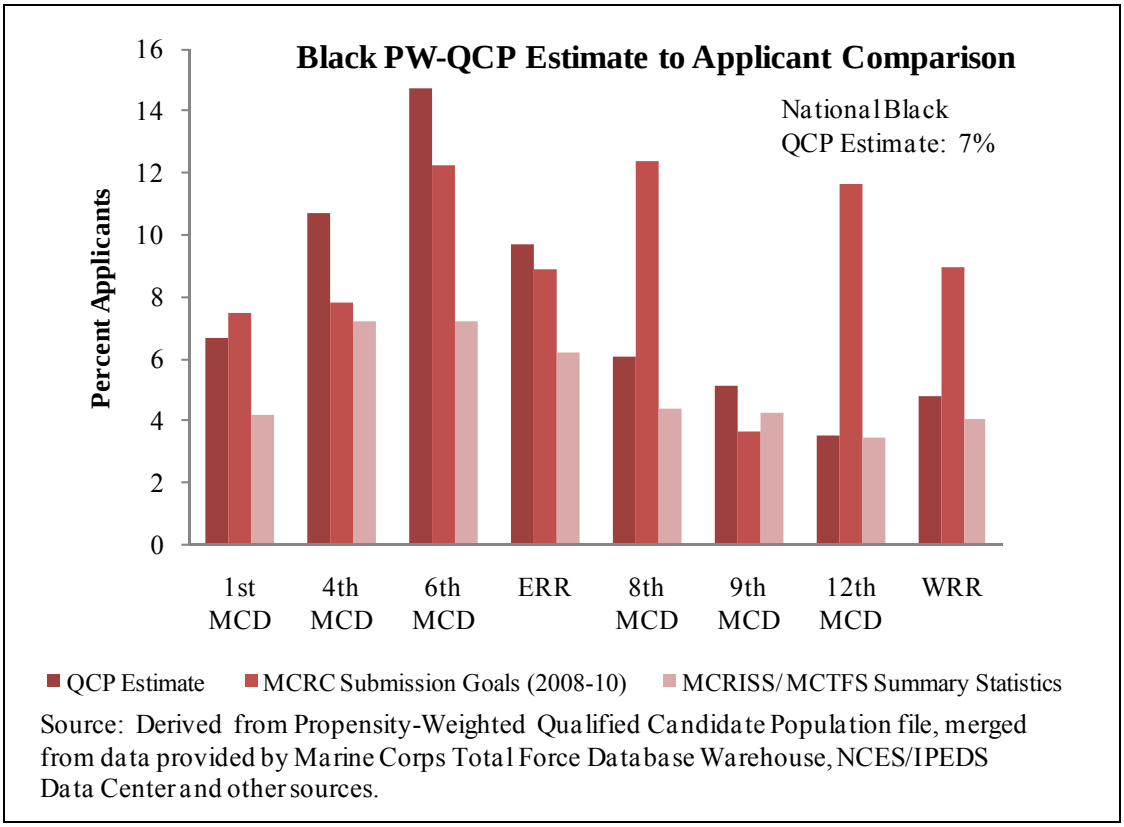


Figure 9. Percent Comparisons of Black PW-QCP, Applicant Submission Goals and Sample Summary Statistics, by Marine Corps District (MCD).

b. Hispanic Applicants

The Marine Corps' Hispanic representation roughly conforms with goals and PW-QCP estimates. Figure 10 compares Hispanic official summary statistics by district with the QCP estimates and MCRC district submission goals for 2008 through 2010. Few differences are seen between the PW-QCP estimates and either the sample's proportion of applicant population or MCRC submission goals. These results tend to suggest that the PW-QCP model can efficiently predict Hispanic QCP for the college market. The comparison also suggests that Hispanic submission goals in the WRR can be increased.

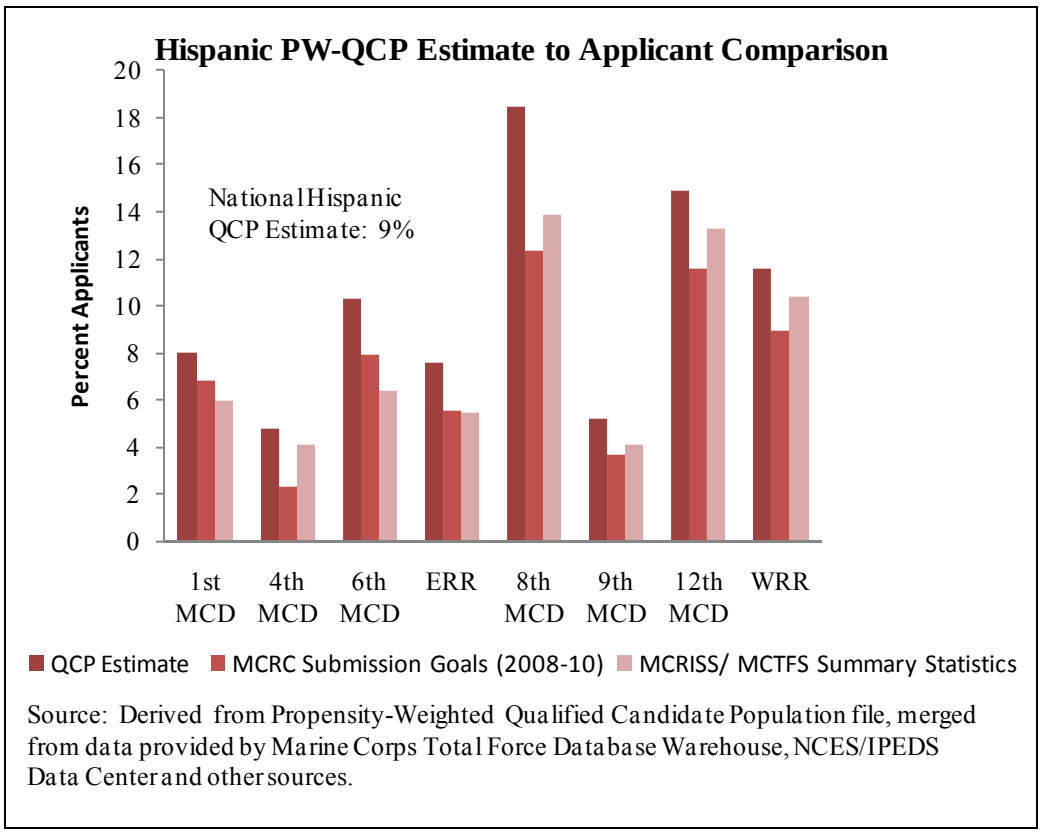


Figure 10. Percent Comparisons of Hispanic PW-QCP, Applicant Submission Goals and Sample Population Summary Statistics, by Marine Corps District (MCD)

c. Asian Applicants

The Marine Corps' Asian representation shows that the group is under-represented, based on both QCP and MCRC submission goals. Of note, MCRC submission goals are allocated as shares of Black, Hispanic, and "Other" minority groups. The "Other" group is comprised primarily of Asians, but also includes American Indians, Native Hawaiians, Pacific Islanders, and Alaskan Natives.[103] The MCRISS/MCTFS data set and the PW-QCP estimate include only persons indicating Asian descent. Figure 11 depicts the comparison of MCRISS/MCTFS data summary statistics by district with the QCP estimates and the MCRC district submission goals for 2008 through 2010. The results support the strength of the QCP estimates in predicting Asian PW-QCP of the college market. Comparisons of results suggest that Asian submission goals can be increased throughout MCRC.

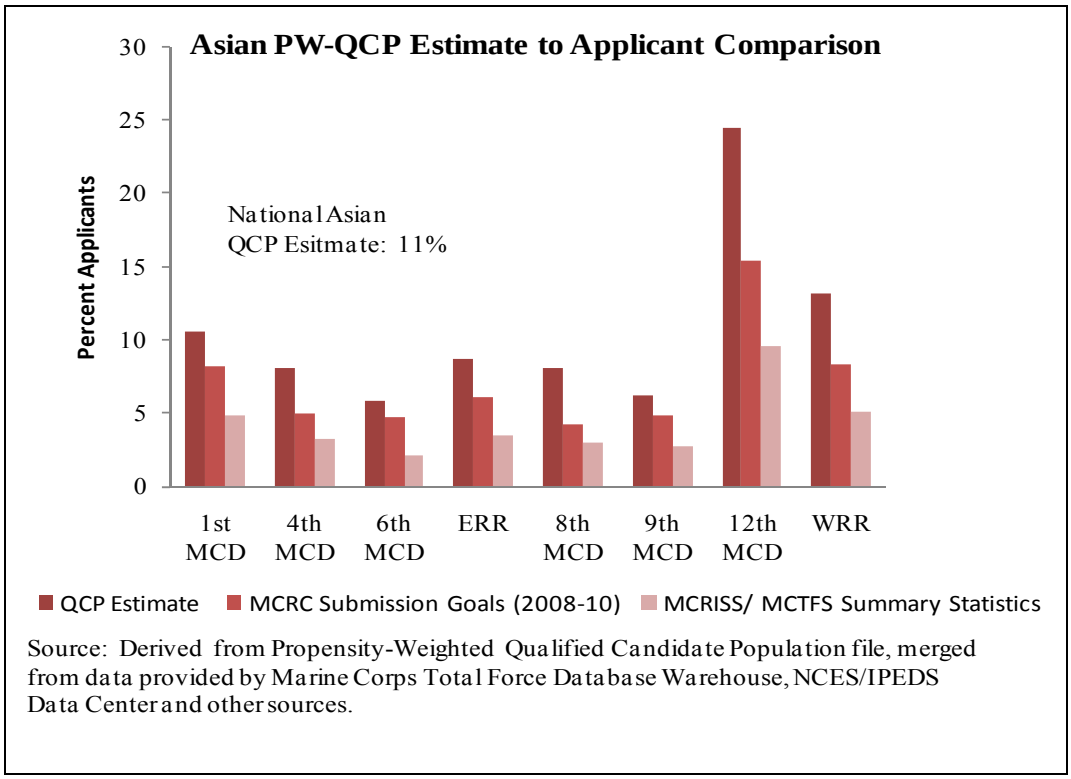


Figure 11. Percent Comparisons of Asian Propensity-Weighted Qualified Candidate Population, Applicant Submission Goals and Sample Population Summary Statistics, by Marine Corps District (MCD)

[103] Laura J. Kelley, *Update of Marine Corps Officer Recruiting Structure Study*. Alexandria, VA: Center for Naval Analyses, 2005.

d. Applicant Results Summary

By comparing the QCP estimates with summary statistics from the MCRISS/MCTFS data and MCRC submission goals, one can see the utility of the QCP as an efficient predictor of the eligible college population in a recruiting area.

D. PHASE 3: PROBIT MODEL

The following section describes the multivariate probit regression approach developed in the present study using the MCRISS/MCTFS data set. The results section analyzes the model's validity in predicting accessions.

1. Methodology

Identifying differences in the likelihood of accession is accomplished by analyzing the selected characteristics of applicants from the 2006–2010 MCRISS/MCTFS data. First, probit multivariate models are used to estimate the influence of each explanatory variable on accessions rates. Second, the partial effects from the maximum likelihood probit estimates are computed to identify each variable's predicted influence on the probability of accession.

a. Theoretical Model

This study uses a probit regression model to predict the probability of accession. Probit models use nonlinear models of the coefficients to bind the predicted values of the dependent variable between 0 and 1. As described in Chapter III, both the dependent variable and the majority of explanatory variables are binary. Thus, a probit model predicts the probability of the dependent variable taking on a value of 1, given the characteristics of the independent variables. The probit model is defined as: $Pr(y=1|x) = \Phi(x\beta)$, where,

y = binary dependent variable

Φ = cumulative standard normal probability distribution

$x\beta$ = product of vector of independent variables and parameters (β).

Probit models are estimated via Maximum Likelihood Estimation (MLE) techniques in which successive approximations (iterations) of coefficient values of the explanatory variables are altered slightly, resulting in the log-likelihood of accession occurring.[104] Iterations continue until the parameter value change is very small and the model reaches "convergence."[105] The theoretical probit model, using maximum likelihood, takes the form:

$$L_i = \ln(P_i / 1 - P_i) = \alpha + \beta x_i + e_i,$$

Where,

L_i = The log of odds ratio

P_i = Probability of an applicant accessing given characteristics x_i

α = Intercept parameter

β = The vector of the slope of independent variable coefficients

x_i = Vector of independent variables

e_i = Error term

The results allow only for the interpretation of model fit, parameter influence and statistical significance, which allows a test of the model's validity as a predictor of accessions. Interpreting the coefficient's effect on the probability of accession requires calculation of the partial effects. This equation depends on the estimated coefficients and the starting value of the explanatory variable.[106] The equation takes the form: $\Phi(\beta_0 + \beta_i)^* \beta_i$. The results are used to interpret the percentage-point change in the probability of accession when the explanatory variable changes by one.[107]

The relevance of a probit model is that if the model is valid, a specific variable's partial effects on the probability of accession can be analyzed by manipulating

[104] Scott Long, "Regression Models for Categorical and Limited Dependent Variables." Thousand Oaks: Sage Publications, 1997.

[105] Ibid., 55.

[106] Introduction to STATA, USCLA: Academic Technology Services, Statistical Consulting Group. Accessed 7 Mar 2011 from http://www.ucla.edu/stat/stata/notes.htm

[107] Long, "Regression Models for Categorical and Limited Dependent Variables."

the mean at interesting levels. One can use the model to test the probability of accession for an individual with one set of attributes (e.g., probability of accession for a Black, 23-year-old male, with a 2.9 GPA, in 1st MCD), against a person with the same individual attributes who resides in 12th MCD.

b. Accession Probit Regression Model

The effect of the explanatory variables on accession is estimated via two models. As set up, a negative likelihood of accession is expected for all of the explanatory variables. Model specification is described below.

(1) OSS Effect on Accession. The goal of the first model is to test whether the characteristics of an applicant from an OSS are a significant predictor of the person's probability of accession. The equation is specified as follows:

$$\text{Accession} = \beta_0 + \beta_1(\text{race}_i) + \beta_2(\text{male}) + \beta_3(\text{married}) + \beta_4(\text{age}) + \beta_5(\text{GPA}) + \beta_6(\text{testscaleconversion}) + \beta_6(\text{unemployment}) + \beta_7(\text{source}_i) + \beta_8(\text{OSS}_i) + e_i \quad \text{(equation 1)}$$

(2) MCD Effect on Accession. The second model tests whether the characteristics of an applicant from a MCD are significant in determining the probability of accession. The equation is described as:

$$\text{Accession} = \beta0 + \beta1(\text{racei}) + \beta2(\text{male}) + \beta3(\text{married}) + \beta4(\text{age}) + \beta5(\text{GPA}) + \beta6(\text{testscaleconversion}) + \beta6(\text{unemployment}) + \beta7(\text{sourcei}) + \beta8(\text{MCDi}) + \text{ei} \quad \text{(equation 2)}$$

2. Results

Three model specifications were estimated for both the OSS and MCD models. The different specifications progressed from an unrestricted model that included both test score conversions and GPA variables to a restricted model that omitted both of the ability proxies. This allowed for testing of the model's robustness in predicting accessions. In the following tables, the model's goodness-of-fit, estimated coefficients, and their statistical significance are displayed, along with partial effects based on the maximum likelihood estimate.

a. OSS Probit Regression Interpretation

Key information from the probit regression results for the OSS models are presented in Table 12. The table includes model goodness-of-fit, coefficient significance, partial effects and variable means.

Results indicate that the model, in all three specifications, is valid, since the calculated probability of having all explanatory variable coefficients (Prob>chi2) simultaneously being zero is very small. Results from the unrestricted model, which included the test-scale conversion variable, show that a majority of the OSS variables are significant at the .01 level. The average age of an applicant is 23, with each additional year of age increasing the probability of accession by .75. The coefficient of the variable "testscaleconversion" is positive, but not statistically significant.

Black, Hispanic, and Asian coefficients are significant and negatively affect accession compared to white applicants in the OSS model that omits test score conversion. Partial effect estimates indicate that being Black reduces the probability of accession by .047, all else held at the mean. Hispanics and Asians have a similar marginal effect on the accession probability. Eight OSSs are not significant in the restricted model, but gain in significance in more restrictive models with higher observations.

Table 12. Probit Regression and Marginal Effects for Officer Selection Stations model with Applicant Characteristics

	Unrestricted		Test Scale Omitted		Test Scale and GPA Omitted	
	LR chi2(93)	2347.37	LR chi2(93)	4402.36	LR chi2(93)	5752.44
	Prob>chi2	0.0000	Prob>chi2	0.0000	Prob>chi2	0.0000
	Probit Partial Effects		Probit Partial Effects		Probit Partial Effects	
VARIABLES	ACCESSION	x-bar	ACCESSION	x-bar	ACCESSION	x-bar
BLACK	-0.0559**	0.031	-0.0473***	0.046	-0.0648***	0.053
HISPANIC	-0.0295	0.055	-0.0571***	0.074	-0.0484***	0.081
ASIAN	-0.0285	0.045	-0.0380**	0.040	-0.0278**	0.041
OTHER	-0.0284	0.024	-0.00228	0.024	-0.00578	0.024
DECLINE	-0.101*	0.005	-0.000326	0.005	-0.00319	0.004
AGEAPPLICANT	0.755***	22.861	0.546***	23.534	0.394***	23.308
contract_gpa	0.0357***	2.977	0.0851***	2.880		
testscalecoversior	0.00366	5.462				
unemployment	-0.0123**	6.554	-0.00317	6.714	-0.00581**	6.792
SOURCETELE	-0.0974***	0.146	-0.0656***	0.138	-0.0692***	0.151
SOURCECLGFR	-0.0455**	0.085	-0.0223	0.072	-0.0462***	0.079
SOURCEPTAD	-0.0358**	0.108	-0.0131	0.112	-0.0263***	0.108
SOURCEFLY	-0.0656	0.004	-0.0304	0.003	-0.0479	0.004
SOURCEWWW	-0.0973***	0.187	-0.0755***	0.158	-0.0859***	0.185
SOURCEADS	-0.137***	0.081	-0.110***	0.056	-0.0942***	0.070
SOURCEWALK	-0.0739***	0.066	-0.0409***	0.057	-0.0426***	0.055
SOURCEOTH	0.00667	0.043	0.0378*	0.035	0.0169	0.033
ALBANY	-0.138***	0.014	-0.147***	0.010	-0.140***	0.013
AMHERST	-0.0433	0.020	-0.0686**	0.013	-0.0668***	0.013
BOSTON	-0.105***	0.020	-0.117***	0.014	-0.0867***	0.013
BUFFALO	-0.146***	0.013	-0.188***	0.010	-0.120***	0.009
GARDENCITY	-0.158***	0.012	-0.134***	0.008	-0.0942***	0.007
MANHATTAN	-0.189***	0.037	-0.206***	0.024	-0.143***	0.024
NEWJERSEY	-0.158***	0.020	-0.183***	0.014	-0.136***	0.016
PHILADELPHIA	-0.143***	0.019	-0.154***	0.012	-0.125***	0.013
PITTSBURG	-0.184***	0.012	-0.224***	0.012	-0.151***	0.013
PROVIDENCE	-0.0883**	0.011	-0.129***	0.009	-0.102***	0.009
WILKESBARN	-0.0813**	0.012	-0.131***	0.011	-0.101***	0.011
STCOLLEGE	-0.128***	0.013	-0.163***	0.009	-0.121***	0.010
SYRACUSE	-0.191***	0.014	-0.210***	0.009	-0.149***	0.011
ANNARBOR	-0.166***	0.012	-0.228***	0.011	-0.141***	0.011
CINCINNATI	-0.0528	0.010	-0.0931***	0.007	-0.0915***	0.008
COLUMBUS	-0.152***	0.013	-0.200***	0.015	-0.143***	0.016
FAIRFAX	-0.105***	0.018	-0.108***	0.012	-0.114***	0.014
HYATTSVILLE	-0.108***	0.032	-0.124***	0.023	-0.114***	0.025
KENT	-0.122***	0.011	-0.183***	0.012	-0.124***	0.012
LEXINGTON	-0.189***	0.010	-0.213***	0.009	-0.148***	0.011
NEWARK	-0.210***	0.002	-0.231***	0.005	-0.169***	0.007
RALEIGH	-0.0978***	0.035	-0.139***	0.024	-0.126***	0.031
RICHMOND	-0.114***	0.017	-0.0940***	0.014	-0.0934***	0.015
ROANOKE	0.00716	0.017	-0.038	0.015	-0.0614***	0.016
ATLANTA	-0.201***	0.003	-0.197***	0.009	-0.141***	0.008
BATONROUGE	-0.210***	0.008	-0.214***	0.011	-0.146***	0.010
CHARLOTTE	-0.0261	0.002	-0.173***	0.006	-0.112***	0.005
COLUMBIA	-0.0557	0.014	-0.0446	0.013	-0.0539***	0.012
GAINSVILLE	-0.0314	0.014	-0.136***	0.012	-0.0680***	0.009
MIAMI	-0.229***	0.008	-0.233***	0.011	-0.147***	0.009
NASHVILLE	-0.154***	0.018	-0.194***	0.014	-0.120***	0.011
NORCROSS	-0.128***	0.011	-0.144***	0.012	-0.105***	0.010
ORLANDO	-0.0418	0.017	-0.106***	0.017	-0.0442**	0.013
TALLAHASSEE	-0.0563	0.008	-0.106***	0.012	-0.0719***	0.010
TUSCALOOSA	-0.170***	0.010	-0.162***	0.011	-0.105***	0.009

Table 12. Probit Regression and Marginal Effects for Officer Selection Stations model with Applicant Characteristics (Continued)

	Unrestricted		Test Scale Omitted		Test Scale and GPA Omitted	
	Probit Partial Effects		Probit Partial Effects		Probit Partial Effects	
VARIABLES	ACCESSION	x-bar	ACCESSION	x-bar	ACCESSION	x-bar
ARLINGTON	-0.0962**	0.009	-0.126***	0.017	-0.0852***	0.015
AUSTIN	-0.142***	0.016	-0.177***	0.016	-0.143***	0.018
COLLEGESTAT	-0.0713*	0.016	-0.143***	0.023	-0.116***	0.020
DENVER	-0.115***	0.015	-0.132***	0.012	-0.119***	0.014
FORTCOLLINS	-0.171***	0.010	-0.211***	0.009	-0.151***	0.011
HOUSTON	-0.207***	0.010	-0.204***	0.010	-0.168***	0.016
LUBBOCK	-0.167***	0.012	-0.216***	0.012	-0.152***	0.013
NORMAN	-0.180***	0.007	-0.193***	0.011	-0.151***	0.013
PHOENIX	-0.110***	0.011	-0.163***	0.014	-0.141***	0.019
TUCSON	-0.165***	0.012	-0.201***	0.010	-0.142***	0.010
CHAMPAIGN	-0.100***	0.013	-0.151***	0.009	-0.151***	0.015
LANSING	-0.133***	0.017	-0.166***	0.014	-0.109***	0.013
INDIANAPOLIS	-0.165***	0.016	-0.186***	0.012	-0.114***	0.011
IOWACITY	-0.149***	0.014	-0.174***	0.011	-0.121***	0.010
KANSASCITY	-0.162***	0.014	-0.197***	0.014	-0.146***	0.014
LAFAYETTE	-0.111***	0.017	-0.127***	0.010	-0.123***	0.013
LINCOLN	-0.224***	0.013	-0.231***	0.010	-0.146***	0.008
MILWAUKEE	-0.0981***	0.015	-0.133***	0.011	-0.107***	0.012
CHICAGO	-0.183***	0.030	-0.217***	0.020	-0.153***	0.023
SPRINGFLD	-0.131***	0.007	-0.185***	0.005	-0.146***	0.007
STLOUIS	-0.154***	0.018	-0.191***	0.012	-0.145***	0.014
TWINCITY	-0.143***	0.018	-0.160***	0.013	-0.145***	0.017
BERKELEY	-0.103***	0.013	-0.150***	0.012	-0.142***	0.015
CORVALLIS	-0.164***	0.012	-0.206***	0.015	-0.133***	0.013
LAFOUR	-0.117***	0.009	-0.163***	0.010	-0.105***	0.009
LAONE	-0.183***	0.009	-0.197***	0.010	-0.143***	0.012
ORANGE	-0.146***	0.011	-0.186***	0.014	-0.149***	0.018
RIVERSIDE	-0.178***	0.007	-0.194***	0.008	-0.154***	0.011
SACRAMENTO	-0.135***	0.011	-0.175***	0.014	-0.122***	0.013
SALTLAKE	-0.236***	0.011	-0.255***	0.012	-0.150***	0.009
SDIEGO	-0.116***	0.015	-0.153***	0.017	-0.105***	0.016
SJOSE	-0.125***	0.008	-0.182***	0.008	-0.133***	0.009
SEATTLE	-0.127***	0.012	-0.185***	0.012	-0.109***	0.010
SPOKANE	-0.139***	0.011	-0.192***	0.010	-0.131***	0.010
Constant	-29.71***		-21.63***		-19.69***	
Observations	9,850	9,850	20,807	20,807	30,364	30,364
*** p<0.01, ** p<0.05, * p<0.1						

b. MCD Probit Regression Interpretation

Results from the limited MCD probit regression are shown in Table 13. As the demographic explanatory results are the same as the OSS model, only the ability proxies, source dummy variables, and MCD dummy variables are shown.

Table 13. Probit Regression and Marginal Effects for MCD model with Applicant Characteristics and Ability Measures

	Unrestricted Model			Test Scale Omitted			Test Scale and GPA Omitted		
VARIABLES	Probit	Partial Effect	x-bar	Probit	Partial Effect	x-bar	Probit	Partial Effect	x-bar
testscalecoversion	0.0104	0.00352	5.462						
contract_gpa	0.0952***	0.0321***	2.977	0.240***	0.0845***	2.880			
SOURCETELE	-0.243***	-0.0775***	0.146	-0.154***	-0.0527***	0.138	-0.244***	-0.0616***	0.151
SOURCECLGFR	-0.0521	-0.0173	0.085	-0.00977	-0.00343	0.072	-0.117***	-0.0305***	0.079
SOURCEPTAD	-0.0533	-0.0177	0.108	-0.0246	-0.00861	0.112	-0.0802**	-0.0213***	0.108
SOURCEFLY	-0.0734	-0.0242	0.004	-0.00886	-0.00311	0.003	-0.126	-0.0325	0.004
SOURCEWWW	-0.260***	-0.0832***	0.187	-0.212***	-0.0715***	0.158	-0.332***	-0.0822***	0.185
SOURCEADS	-0.410***	-0.123***	0.081	-0.327***	-0.106***	0.056	-0.411***	-0.0946***	0.070
SOURCEWALK	-0.125**	-0.0407**	0.066	-0.0608	-0.0211	0.057	-0.0951**	-0.0250**	0.055
SOURCEOTH	0.0669	0.0229	0.043	0.119**	0.0431**	0.035	0.0811*	0.0228	0.033
MCD1	-0.693***	-0.204***	0.232	-0.612***	-0.189***	0.168	-0.672***	-0.148***	0.173
MCD4	-0.571***	-0.169***	0.177	-0.546***	-0.170***	0.147	-0.663***	-0.146***	0.165
MCD6	-0.606***	-0.172***	0.111	-0.577***	-0.177***	0.127	-0.540***	-0.120***	0.107
MCD8	-0.702***	-0.194***	0.118	-0.657***	-0.198***	0.134	-0.802***	-0.166***	0.150
MCD9	-0.757***	-0.215***	0.192	-0.700***	-0.209***	0.142	-0.802***	-0.167***	0.157
MCD12	-0.752***	-0.206***	0.129	-0.732***	-0.216***	0.142	-0.768***	-0.160***	0.144
Observations		9,850			20,807			30,364	
*** p<0.01, ** p<0.05, * p<0.1									

The estimates reveal that the districts have a statistically significant effect on accession as compared with MCRC officer programs. For example, the results indicate that a one percent increase in the average population of 6th MCD is predicted to decrease the probability of accession by .017

The GPA coefficient is significant; however, the low partial effect indicates that an increase of the average GPA by 1-point (from a 2.9 to 3.9) increases the probability of accession by only .032 percentage points. Source results indicate that, compared to applicants prospected through OSO area canvassing, the other prospecting strategies, with the exception of "SOURCEOTHER," decrease the probability of accession. This confirms the importance of an OSO's subjective evaluation and marketing/salesmanship skills at prospecting individuals with the greatest chance of succeeding. Because the source variable is self-reported, the area canvass reporting could

also be inflated to increase positive marks on an OSO's performance evaluation, thus downward biasing the effect of the other recruiting source variables.

Progression from the restricted to unrestricted models results in very little change in the estimated marginal effects. Similarly, based on goodness-of-fit, the unrestricted model appears to be just as effective in predicting accession as the restricted models.

E. PROBIT MODEL APPLICATIONS

Based on the preceding findings, the model selected is determined to be a valid predictor and can be manipulated to analyze the probability of accession for applicants with selected background attributes. To provide an example of how the model can be used, predicted probability of accession differences were calculated for two cases who have different test scores, GPA, and MCD characteristics, but are otherwise similar.

1. Probit Model: Same Characteristics, Different MCD

Through manipulation of the mean values used to estimate the partial effects from the probit model, one can calculate the differences in the predicted probability of accession for separate MCDs holding constant an individual's other characteristics. The predicted probability is calculated using different values for the partial effects from the selected starting point values of the independent variables. This approach calculates the predicted probability of accession based on the selected values of the independent variables. Separate probit regressions are estimated for each MCD using the same variable assumptions; the results are compared against one another to see the differences in predicted probability of accession.

The example predicts the probability of accession for a 25-year-old, single, Black male whose test scale conversion score is 7.0 (29 ACT/1290 SAT), GPA is 3.5, recruiting source is area canvassing and who lives in an area with an unemployment rate of 8 percent. Table 14 presents the probit partial effects results and probability ratios for all six districts.

Table 14. Differences Between Probability of Accession for Specific Black Applicant Using Probit Model Partial Effects Estimates

Restricted Model Probability of Accession By District - Black Point Estimate						
	1st MCD	4th MCD	6th MCD	8th MCD	9th MCD	12th MCD
Predicted (at x-bar)	0.3083	0.3083	0.3083	0.3083	0.3083	0.3083
Predicted (at x)	0.3906	0.4258	0.4299	0.3814	0.3735	0.3644
Difference in Probability of Accession By District						
Against 1st MCD	0.0000	0.0352	0.0392	-0.0092	-0.0172	-0.0262
Against 4th MCD		0.0000	0.0041	-0.0444	-0.0524	-0.0614
Against 6th MCD			0.0000	-0.0485	-0.0564	-0.0655
Against 8th MCD				0.0000	-0.0079	-0.0170
Against 9th MCD					0.0000	-0.0090
Against 12th MCD						0.0000
Restrictions:	Black = 1	Male = 1	GPA = 3.5	Unemployment = 8%		
	Age = 25	Test Scale = 7.0				

The interpretation of Table 14 is as follows. The predicted probability of accession for this 'notional' person who lives in the 1st MCD is .391 (see Column 1). An otherwise identical applicant who happens to live in the 4th MCD has a probability of accession of .430 (see Column 2). Thus, the probability of accession is .035 points lower for individuals who live in the 1st MCD than for otherwise similar individuals who live in the 4th MCD (see Panel 2, Column 2). For another comparison, the same notional applicant in the 12th MCD has a probability of accession .066 points lower than an otherwise identical applicant who happens to reside in the 6th MCD (see Panel 2, Column 6), and so forth.

These differences, although small, can be useful in determining behavioral characteristics within a district or OSS. The estimates suggest that identical Black applicants have a higher probability of accession if living in the ERR rather than the WRR.

The second example uses the same characteristics, but for a Hispanic applicant. Table 15 presents the predicted probability of accession for a 25-year-old, single, male Hispanic applicant with a 3.5 GPA, a 7.5 converted test score in an area with 8 percent unemployment.

Table 15. Differences Between Probability of Accession for Specific Black Applicant Using Probit Model Partial Effects Estimates

Restricted Model Probability of Accession By District - Hispanic Point Estimate						
	1st MCD	4th MCD	6th MCD	8th MCD	9th MCD	12th MCD
Observed Probability (Sum)	0.3280	0.3280	0.3280	0.3280	0.3280	0.3280
Predicted Probability (mean)	0.3083	0.3083	0.3083	0.3083	0.3083	0.3083
Predicted Probability (point)	0.4477	0.3543	0.4878	0.4382	0.4300	0.4206
Difference in Probability of Accession By District						
Against 1st MCD	0.0000	-0.0934	0.0401	-0.0095	-0.0178	-0.0272
Against 4th MCD		0.0000	0.1335	0.0839	0.0756	0.0662
Against 6th MCD			0.0000	-0.0497	-0.0579	-0.0673
Against 8th MCD				0.0000	-0.0082	-0.0176
Against 9th MCD					0.0000	-0.0094
Against 12th MCD						0.0000
Restrictions	Hispanic = 1	Male = 1	GPA = 3.5	Unemployment = 8%		
	Age = 25	Test Scale = 7.0				

The interpretation of Table 15 is as follows. The predicted probability of accession for this 'notional' person who lives in the 8th MCD is .438 (see Column 4). An otherwise identical applicant who happens to live in the 4th MCD has a probability of accession of .354 (see Column 2). Thus, the notional person's probability of accession is .084 points higher for similar individuals who live in the 8th MCD than for individuals who live in the 4th MCD. For another comparison, a notional applicant in the 1st MCD has a probability of accession .027 points higher than an otherwise identical applicant who happens to reside in the 12th MCD (see Panel 2, Column 6), and so forth.

F. CHAPTER SUMMARY

This chapter describes the methodology and results from the three phases of the study. PW-QCP estimates (based on the 2007–2008 population and percent share of eligible full-time-college-enrolled, degree-likely, male students with the propensity to serve in the military) is estimated in Phase 1 by race/ethnicity, state, college, MCD and OSS. The results indicate a possible comparative standard for minority demographic goals based on the PW-QCP model as 7 percent Black, 9 percent Hispanic and 11 percent Asian.

Phase 2 relates the QCP estimates with 2008-2010 MCRC minority submission goals, and the 2006–2010 MCRISS/MCTFS data applicant summary. The comparisons

indicate that the PW-QCP estimates are close to applicant submission goals and/or sample applicant production, thus, is an efficient predictor of the eligible college population in a recruiting area.

Phase 3 identifies differences in accession probabilities based on a multivariate probit regression model. Results indicate that the selected characteristics, namely the test scale conversion, GPA, and MCD and OSS dummy variables, are valid predictors of accession. Finally, the chapter calculates the predicted probability of accession between otherwise identical applicants who happen to live in different MCDs.

V. CONCLUSIONS AND RECOMMENDATIONS

> We've not done a good job of recruiting diversity in the Marine Corps, and I'm going to change that. And by the way, I'm going to change it by not lowering standards. I'm going to change it by not having quotas. ... I don't know how we're going to do it, but I've got smart Marines who are going to help me figure it out. -General Amos, CMC 2010[108]

A. CONCLUSION

The purpose of this study was to build a propensity-weighted qualified candidate population (PW-QCP) model from which Marine Corps Recruiting Command (MCRC) could base minority applicant submission goals and determine if current MCRC officer production was reflective of the racial/ethnic diversity of this eligible population. To accomplish this, the study consisted of three phases.

1. Propensity-Weighted QCP

Annually, over 60 percent of Marine Corps officer accessions come from college graduates who, while still attending college, were recruited by an Officer Selection Officer (OSO). OSOs are given minority officer applicant submission goals that are representative of the commissioning-eligible population. It makes sense for OSOs to focus more effort prospecting in an area that has a higher density of eligible minority candidates. To aid this process, the first phase developed an approach to estimate the PW-QCP.

As one of the most fickle factors in officer recruiting, propensity to serve is considered important in determining the recruitable population, since it attempts to determine interest in joining the Marine Corps, not just potential eligibility. Like unemployment rates, an area's support of the military plays a key role in a college student's career decisions. Without including an "interest" factor, broad-based QCP

[108] Juliann Vachon, "Marine Corps Commandant says Afghanistan is Top Priority," *The Beaufort* Gazette, 15 November 2010. Accessed 20 November 2010 from http://www.islandpacket.com/2010/11/15/1445671/marine-corps-commandant-says-afghanistan.html.

estimates are less meaningful to recruiting planners and administrators. However, due to its volatility, periodic updates to propensity measures must be made.

The PW-QCP model estimates the number of test-score qualified male college graduates for 1,088 nationally accredited, degree-granting institutions for 2007–2008. The results estimate that the national PW-QCP for the three largest minority groups is 7 percent Black, 9 percent Hispanic, and 11 percent Asian. Minority group distributions, however, are not equal throughout MCDs, or OSO areas of responsibility, suggesting that evenly apportioning minority submission goals would decrease the overall ability to achieve a nationally representative minority applicant rate. The QCP estimates can be used by MCRC to identify colleges and universities within an OSO's area of operation, that yield the highest proportions of the target population, and as a measure of the minority eligible population from which to allocate district submission shares.

2. Applicant-to-Accession Production, 2006–2010

Minority officer submission goals allow MCRC the potential to grow officer corps diversity by ensuring that all groups are represented in numbers that reflect the nation's eligible population. The results show that, even as the national minority population rose, the average proportion of Marine Corps officer applicants from OCC and PLC programs from 2006–2010 were 5 percent Black, 8 percent Hispanic and 4 percent Asian. Minority accessions were further reduced through the accession selection process, which resulted in minority percentages of 4 percent Black, 6 percent Hispanic and 3 percent Asian. This suggests that from the applicant population, based on the MCD board's view of their overall qualifications, minority applicants tend to be selected for accession at lower rates than their white counterparts. This is supported by the average test scale conversion of applicant-reported SAT and ACT scores. The average Black applicant reported scores that converted to the 2 to 2.5 range; the average Hispanic reported scores that converted to the 3 to 3.5 range; and the average Asian reported score converted to 7.5 or above.

To investigate whether applicant production was reflective of minority eligibility estimates, PW-QCP estimates and submission goals were compared, by MCD. The

sample shows that for Blacks, submission goals in the 8th and 12th MCDs were high in relation to both PW-QCP estimates and production; production in 6th MCD was lowest compared with high PW-QCP estimates and submission goals for the district. For Hispanics, both the PW-QCP estimates and submission goals were exceeded by production in the 4th, 8th and 12th MCDs, indicating that the submission goals were too low. Finally, for Asians, submission goals and PW-QCP estimates are higher than applicant production across the MCDs. The comparison by MCD could depict a shift in the area racial/ethnic composition when PW-QCP estimates and applicant production rates exceed submission goals. Comparisons could also indicate that high-quality individuals are difficult to attract in areas where applicant production is lower than both PW-QCP estimates and submission goals.

3. Predicted Probability of Accession

The sample of 32,898 applicants identified in the MCRISS/MCTFS data resulted in 8,330 accessions from 2006 to 2010. This means that approximately one in four applicants prospected during a fiscal year displayed characteristics that were superior to their otherwise qualified counterparts and were selected for accession. Using multivariate analysis techniques, an accession model was estimated using key explanatory variables of personal demographics, recruiting area and source, aptitude, academics, area unemployment and area PW-QCP rates.

The primary probit model was statistically shown to be a valid model for predicting accessions. As expected, all coefficients for an unrestricted model that included an aptitude test scale conversion score were generally statistically significant. Restricting the model by omitting the aptitude variable resulted in the explanatory variables gaining statistical significance, and did not result in large changes in their partial effect estimates. Increases in aptitude and academic variable scores positively affected accession probability, while a decrease in the unemployment rate reduced the probability of accession. The effects of all variables performed in accordance with the predictions of economic and social theory.

Establishing the validity of the probit model and the significance of the explanatory variables was important to explain the applicability of the model to users. Probit model regression allows users to manipulate the starting point of the explanatory variables to explore the accession differences between applicants with different characteristics, or between different recruiting areas. Using this approach, the predicted probability of accession of an identical Black, high-quality applicant was estimated for each of the districts. The results predicted that a high-quality Black applicant, with the specific characteristics identified, had the highest probability of accession if he lived in the 6th MCD, which also has the highest Black QCP estimates. A similar estimation was done for an Hispanic applicant with results also estimating that the 6th MCD, which has the lowest Hispanic QCP estimates, had the highest predicted probability of accession. The reason why these specific types of applicants from the 6th MCD have a higher probability of accession than from another district is unknown.

4. Limitations

Several potential weaknesses lie within each phase of this study. In the first phase, the QCP model is a fairly reliable estimate of the eligible college population; however, data omissions could decrease the model's accuracy. The omission of baccalaureate degree granting institutions reduces the eligible population. The inability to separate college acceptance score data by racial/ethnic groups limited the model's potential in identifying more reliable eligibility rates. Graduation rates are based off a six-year cycle, to account for student migration, which will overestimate the population at the institution where graduation occurred. Also, the propensity to serve ratio was based on survey responses at a national level, while propensity to serve in the military is susceptible to variation at the local level.

A key weakness in Phase 2 data was the limited amount of information available for applicants. While the MCD and OSS variables may control unobserved characteristics, variables such as veterans' population and civilian wage could influence youth propensity, and be useful to have. Variables that were present in MCRISS, but not useable due to missing observations were: mental aptitude (less than 30 percent of the

sample population had a self-reported ACT or SAT score), physical qualifications, character and interview appraisals, and security clearance eligibility. In Phase 3, the probit model's validity was demonstrated; however, its utility could be improved with the addition of individual characteristics that were discussed above.

5. Summary

Increasing the racial/ethnic diversity of the Marine Corps requires the ability to prospect the eligible minority population in the most efficient manner. At the most basic level, OSOs must have ready-knowledge of QCP in their area of operation and of historic applicant-to-accession production to decide how they should focus their efforts.

The findings from the PW-QCP model show that a representative goal of the national representation of eligible Black, Hispanic and Asian population is 27 percent. A comparison of 2006–2010 applicant and accession data with 2008-2010 district minority submission goals and QCP estimates show that minority applicant efforts in the districts should be modified to reflect the changing demographics of the area. Finally, probit model estimates show that the probability of minority applicant accession is dependent on their MCD. The findings suggest that increasing minority representation in the officer corps relies on: (1) ensuring that submission goals approximately align with QCP estimates; (2) submission goals are being met by MCDs; and (3) minority submission applicants, at a minimum, meet the average applicant's characteristics.

B. RECOMMENDATIONS

Based on the findings, the following recommendations are submitted.

1. MCRC should reevaluate minority submission goals and align them to reflect the qualified racial/ethnic group demographics of the MCDs. This thesis shows that, throughout the six MCDs, QCP estimates, applicant submission goals, and applicant and accession production fluctuate, and rarely coincide with one another. Comparing these three data sources can give MCRC a better idea of which minority groups are dominant in an area, where applicants should be prospected, and what the average applicant qualifications in an area is.

2. MCRC should adopt the PW-QCP model to provide estimates of basic eligibility and propensity in an OSO's area of operation. While the propensity measure is national and not reflective of local area dynamics, including the propensity-weight to QCP estimates delivers a more realistic assessment of the target population.

3. MCRC should improve collection and maintenance of demographic, test score, and physical fitness data on officer applicants through MCRISS user training. MCRISS is easy to gather information from, and serves as the most detailed source of information on officer applicants, but there are significant gaps in information. To enhance future study's of the effects of applicant qualifications, applicant information must be dependably provided. With more information, the probit model's OSS estimate would capture the effects of the recruiting areas' propensity for the Marine Corps. In other words, the propensity estimate should be based on applicant characteristics in an area that predicts the willingness to initiate the Marine Corps' officer accession process. This would allow additional explanatory variables to account of unobserved variables and produce better estimates on an applicant's probability of accession.

As the Marine Corps continues its efforts to increase minority officer recruiting, the findings presented in this thesis can provide valuable information to OSOs on their target population. Through enhanced research of the eligible population and OSO applicant production, MCRC can gain significant insight on where high-quality, military-propensed minority college students, with the highest probability of accession, can be prospected and recruited from. To do so would strengthen MCRCs ability to positively impact minority officer recruiting efforts.

APPENDIX

Table 16 contains detailed information on the 1,088 schools used in this study, sorted by state.

Table 17 contains the percent of Propensity-Weighted Qualified Candidate Population (PW-QCP), by state for Academic Year 2007–2008.

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08

Institution Name	State	Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score						Propensity-Weighted Qualified Candidate Population				
		Total	White	Black	Hisp	Asian	Total	White	Black	Hisp	Asian	Tscale	White	Black	Hisp	Asian	Total QCP
University of Alaska Anchorage	AK	3150	2069	91	146	234	15	25	21	22	18	4	11	1	1	1	14
University of Alaska Fairbanks	AK	1648	1126	38	48	64	23	29	21	0	20	4	7	0	0	0	7
Alabama State University	AL	1764	22	1724	8	0	12	17	21	40		1	0	4	0	0	4
Stillman College	AL	472	19	404	2	0	16	13	19	100		2	0	1	0	0	1
Tuskegee University	AL	1083	0	948	2	0	33		44	0	0	2	0	6	0	0	6
Jacksonville State University	AL	2665	1648	760	21	15	23	35	25	33	15	2	5	3	0	0	8
University of North Alabama	AL	2155	1408	270	22	28	32	45	26	50	38	2	6	1	0	0	7
Alabama A & M University	AL	1848	25	1774	11	2	27	11	33	100	0	2	0	9	0	0	9
Oakwood University	AL	680	1	626	4	2	30		37	50		2	0	5	0	0	5
Faulkner University	AL	894	573	269	13	2	21	26	26	0		2	2	1	0	0	3
Troy University	AL	3907	2352	1069	80	42	33	46	31	32	38	2	13	7	1	0	20
University of West Alabama	AL	591	318	262	7	1	30	37	24	0		3	2	2	0	0	3
Auburn University at Montgomery	AL	1117	787	230	13	22	20	26	19	20	33	3	3	1	0	0	4
University of Montevallo	AL	761	584	71	21	21	40	51	63	50	88	3	4	1	0	0	6
Huntingdon College	AL	461	364	72	4	4	49	55	50	0	100	3	4	1	0	0	5
University of South Alabama	AL	3417	2310	484	83	114	27	34	27	42	38	3	14	4	1	1	20
Spring Hill College	AL	425	309	46	34	5	64	67	55	50	50	5	6	1	1	0	8
The University of Alabama	AL	9734	8310	874	211	107	61	65	59	48	46	5	146	23	5	2	176
University of Alabama in Huntsville	AL	2309	1714	249	51	59	45	48	35	57	50	5	22	4	1	1	29
Samford University	AL	954	837	72	11	8	76	78	47	0	100	5	18	2	0	0	19
University of Mobile	AL	453	326	59	9	2	34	44	21	50	0	5	4	1	0	0	5
University of Alabama at Birmingham	AL	3096	2043	617	47	153	37	42	33	39	67	5	26	10	1	4	41
Birmingham Southern College	AL	688	582	56	8	17	65	65	75	50	56	5	11	2	0	0	14
Auburn University Main Campus	AL	9258	8025	656	169	195	61	67	45	38	52	6	177	16	4	4	202
University of Arkansas at Pine Bluff	AR	1262	39	1201	4	3	19	20	28	0		1	0	3	0	0	3
Arkansas Tech University	AR	2739	2300	183	75	45	34	40	19	20	25	3	14	1	0	0	15
Southern Arkansas University Main Campus	AR	962	575	283	21	10	21	33	31	22	0	3	3	2	0	0	5
University of Arkansas at Little Rock	AR	2224	1497	484	53	76	18	26	10	19	30	3	7	1	0	1	9
Arkansas State University-Main Campus	AR	3143	2237	550	32	23	35	42	22	31	26	3	17	4	0	0	21
Henderson State University	AR	1291	927	251	31	8	29	36	31	20	50	4	7	3	0	0	10
Ouachita Baptist University	AR	652	533	67	15	1	61	62	35	50	100	4	8	1	0	0	9
University of Central Arkansas	AR	3968	2779	575	81	82	35	45	25	8	41	4	30	6	0	1	37
John Brown University	AR	722	578	15	27	9	67	68	33	50	80	5	12	0	1	0	13
Harding University	AR	1767	1471	89	48	9	59	62	36	64	67	5	27	2	2	0	31
University of Arkansas	AR	6813	5640	323	214	183	56	59	45	63	64	5	100	7	7	5	119
Hendrix College	AR	596	494	19	25	18	65	71	92	60	64	6	13	1	1	1	15
Grand Canyon University	AZ	852	140	47	50	11	52	66	60	53	50	3	2	1	1	0	4
Northern Arizona University	AZ	5720	4235	206	578	168	44	55	53	48	44	4	56	4	12	2	75
Arizona State University	AZ	20903	13869	881	2787	1280	52	58	38	50	64	4	193	13	61	26	294
University of Arizona	AZ	12245	7931	362	1883	711	54	58	45	55	57	5	124	7	51	15	197
Embry Riddle Aeronautical University-Prescott	AZ	1271	878	23	104	87	56	58	75	26	48	5	14	1	1	2	17

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score							Propensity-Weighted Qualified Candidate Population						
California State University-Dominguez Hills	CA	1926	253	484	797	194	29	47	28	40	29	1		1	1	4	0	6		
California State University-Los Angeles	CA	4533	456	300	1997	1076	23	34	15	29	39	2		1	1	10	5	17		
California State University-San Bernardino	CA	4240	1312	426	1544	398	36	49	33	44	46	2		6	2	11	2	21		
California State University-East Bay	CA	3557	775	379	510	1063	43	52	23	39	54	2		5	2	4	9	20		
California State University-Bakersfield	CA	1695	510	96	563	121	38	50	25	47	38	2		3	0	6	1	10		
California State University-Fresno	CA	6729	2362	482	2111	1013	43	57	27	41	48	2		16	3	19	8	46		
Woodbury University	CA	485	207	12	168	39	49	40	44	73	50	2		1	0	3	0	4		
California State University-Northridge	CA	10043	3064	843	2794	1492	35	48	32	35	44	3		22	7	27	13	69		
California State University-Stanislaus	CA	1794	721	64	476	239	46	56	25	50	51	3		6	0	7	2	15		
California State University-Sacramento	CA	7912	3288	551	1178	1749	37	46	30	36	41	3		23	4	12	14	53		
California State University-San Marcos	CA	2379	1229	63	496	292	37	49	42	42	49	3		9	1	6	3	18		
Vanguard University of Southern California	CA	555	369	19	88	20	50	57	29	64	80	3		3	0	2	0	5		
University of La Verne	CA	924	325	82	267	50	54	60	58	62	57	3		4	1	5	1	11		
California State University-Monterey Bay	CA	1435	675	87	361	103	37	35	32	50	25	3		4	1	6	1	12		
California State University-Fullerton	CA	9788	3105	337	2649	2472	42	52	36	45	53	3		29	4	39	31	103		
La Sierra University	CA	550	138	46	97	163	25	30	16	30	27	3		1	0	1	1	3		
Pacific Union College	CA	529	186	25	87	156	41	39	9	28	56	3		1	0	1	2	4		
San Jose State University	CA	9628	2579	545	1545	3684	38	45	27	35	44	3		21	4	18	39	82		
San Francisco State University	CA	8130	2422	374	1198	2574	41	46	27	36	49	3		20	3	14	30	68		
California State University-Long Beach	CA	10112	3245	453	2546	2590	49	60	52	47	54	3		35	7	39	34	115		
California State University-Chico	CA	7042	4683	146	890	432	49	59	31	44	41	3		50	1	13	4	68		
Fresno Pacific University	CA	436	237	17	107	15	58	64	50	62	25	3		3	0	2	0	5		
Sonoma State University	CA	2613	1790	46	290	136	44	53	35	43	37	3		17	0	4	1	23		
California State Polytechnic University-Pomona	CA	9037	2222	300	2497	2835	46	54	38	45	53	4		25	4	43	42	115		
Humboldt State University	CA	2903	1526	119	327	104	37	47	32	32	41	4		15	1	4	1	22		
University of California-Riverside	CA	7363	1364	424	1673	3325	61	61	74	62	65	4		17	11	40	61	129		
Whittier College	CA	621	291	23	148	57	53	49	27	61	67	4		3	0	3	1	8		
California Baptist University	CA	969	583	63	156	37	51	56	30	52	50	4		7	1	3	1	11		
California Maritime Academy	CA	635	440	12	49	69	63	67	20	58	60	4		7	0	1	1	10		
San Diego State University	CA	10482	4790	381	2153	1777	57	64	62	53	61	4		74	9	50	35	168		
Azusa Pacific University	CA	1486	943	68	180	122	59	65	53	53	56	4		15	1	4	2	23		
Saint Mary's College of California	CA	929	502	56	186	95	64	69	49	60	69	4		8	1	5	2	16		
California Lutheran University	CA	873	516	36	131	51	61	70	60	58	92	5		10	1	4	2	16		
The Master's College and Seminary	CA	408	305	13	30	28	63	59	0	38	60	5		5	0	1	1	6		
Biola University	CA	1413	964	41	149	160	68	71	50	76	65	5		18	1	6	4	29		
Point Loma Nazarene University	CA	896	702	17	101	56	65	72	80	63	52	5		14	1	3	1	18		
University of California-Santa Cruz	CA	6827	3515	159	1032	1490	69	73	66	67	75	5		77	5	38	45	165		
University of San Francisco	CA	1943	705	77	244	387	67	61	51	74	71	5		13	2	10	11	36		
University of Redlands	CA	1226	700	50	140	73	69	74	83	81	80	5		16	2	6	2	26		
Concordia University	CA	505	338	14	64	27	53	59	45	52	55	5		6	0	2	1	9		
University of California-Davis	CA	10149	3580	261	1128	4244	78	83	73	74	83	5		89	10	46	141	285		

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score						Propensity-Weighted Qualified Candidate Population					
University of the Pacific	CA	1464	539	50	147	464	58	64	46	58	54	5	10	1	5	10	26	
University of California-Irvine	CA	10155	2388	210	1209	5346	79	77	72	75	85	6	61	8	55	200	324	
Loyola Marymount University	CA	2284	1369	153	415	282	77	79	76	82	82	6	36	6	21	10	73	
California Polytechnic State University-San Luis Obispo	CA	9953	6365	123	1165	1193	66	71	63	60	72	6	149	4	42	38	233	
University of California-Santa Barbara	CA	8381	4447	209	1538	1437	79	84	73	76	80	6	123	8	71	51	253	
University of San Diego	CA	2040	1289	60	268	171	74	74	75	80	78	6	31	2	13	6	53	
Westmont College	CA	502	341	13	51	48	82	81	100	63	86	6	10	1	2	2	15	
Santa Clara University	CA	2411	1122	79	294	386	85	86	88	89	81	6	35	4	17	15	71	
Chapman University	CA	1677	1150	47	160	135	65	69	56	61	73	6	29	2	6	5	41	
Pepperdine University	CA	1323	828	70	131	110	77	81	82	84	82	6	24	3	7	4	39	
University of California-San Diego	CA	10413	2920	134	1137	4990	83	85	75	74	87	6	89	6	56	208	359	
Occidental College	CA	815	494	52	108	113	87	88	82	89	80	7	17	3	7	5	31	
University of California-Los Angeles	CA	11374	3972	357	1472	4427	87	91	73	82	92	7	141	17	86	212	456	
University of California-Berkeley	CA	11409	3656	314	1191	4758	87	90	77	82	93	8	148	18	81	265	512	
University of Southern California	CA	7874	3851	352	879	1705	86	88	83	88	91	8	163	23	68	99	353	
Claremont McKenna College	CA	655	366	23	59	77	96	95	92	93	95	9	18	2	5	5	30	
Stanford University	CA	3321	1345	326	400	704	94	94	92	94	98	9	64	25	35	47	172	
Pomona College	CA	755	395	52	65	84	94	95	94	100	93	9	20	4	6	6	37	
Harvey Mudd College	CA	475	275	8	42	89	92	89	0	91	86	10	14	0	4	6	24	
California Institute of Technology	CA	610	271	6	38	228	88	85	67	84	96	10	13	0	3	17	33	
Colorado State University-Pueblo	CO	1689	883	166	380	54	27	36	33	31	18	3	5	1	3	0	10	
Mesa State College	CO	1934	1494	52	165	60	30	34	33	24	30	3	8	0	1	0	9	
Adams State College	CO	774	432	71	207	15	22	28	14	27	0	3	2	0	2	0	4	
Metropolitan State College of Denver	CO	6077	4102	322	719	281	19	23	13	20	17	3	17	1	5	1	24	
Western State College of Colorado	CO	1236	943	35	57	14	32	38	0	34	0	4	8	0	1	0	8	
University of Northern Colorado	CO	3556	2730	147	293	87	42	50	45	47	55	4	33	3	6	2	43	
Fort Lewis College	CO	1754	1157	24	75	17	30	37	20	34	20	4	10	0	1	0	12	
Regis University	CO	785	542	24	91	25	58	66	50	55	62	4	9	0	2	0	12	
University of Colorado at Colorado Springs	CO	2318	1711	79	233	115	40	45	48	42	55	4	18	2	4	2	26	
University of Colorado Denver	CO	2890	1776	124	310	295	31	38	42	26	34	4	16	2	4	3	25	
Colorado State University	CO	9296	7377	214	552	289	61	64	57	56	62	5	127	5	15	6	155	
University of Colorado at Boulder	CO	12855	10033	207	788	786	65	68	53	60	66	6	225	6	29	23	283	
University of Denver	CO	2235	1630	36	128	104	70	75	61	74	72	6	40	1	6	3	51	
Colorado School of Mines	CO	2454	1781	32	133	128	66	69	57	58	75	7	48	1	6	5	60	
Colorado College	CO	905	720	24	45	40	88	87	78	81	100	7	26	1	3	2	33	
University of Bridgeport	CT	518	132	174	61	22	41	35	41	34	73	2	0	1	0	0	2	
Albertus Magnus College	CT	507	308	99	48	5	46	53	76	50		2	1	1	0	0	3	
Southern Connecticut State University	CT	2615	1861	327	140	64	32	39	32	41	41	3	11	3	2	1	16	
Western Connecticut State University	CT	2126	1624	163	148	72	33	45	21	35	61	3	11	1	1	1	14	
University of Connecticut-Tri-Campus	CT	910	492	56	83	101	46	47	53	52	64	3	4	1	1	2	8	
University of New Haven	CT	1525	1078	117	94	35	39	47	38	45	23	3	9	1	1	0	12	

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score							Propensity-Weighted Qualified Candidate Population				
Eastern Connecticut State University	CT	1896	1419	152	89	48	39	47	40	39	40	48	3	12	2	1	0	15
Central Connecticut State University	CT	4026	3048	305	213	119	39	47	38	40	48	4	30	4	3	2	39	
University of Hartford	CT	2398	1540	224	145	83	51	54	49	47	57	4	20	4	3	2	29	
Sacred Heart University	CT	1441	1201	59	66	18	59	63	50	55	50	4	18	1	2	0	21	
Quinnipiac University	CT	2134	1717	63	98	42	74	77	63	71	67	5	36	2	3	1	42	
Fairfield University	CT	1427	1018	40	96	47	74	79	70	78	85	5	24	1	4	2	31	
University of Connecticut	CT	7979	5135	357	386	639	73	77	59	70	79	6	130	12	16	22	181	
United States Coast Guard Academy	CT	712	619	15	43	25	76	77	50	69	53	7	19	0	2	1	22	
Trinity College	CT	1100	658	69	61	67	86	87	95	76	86	7	24	5	4	3	35	
Connecticut College	CT	725	552	28	31	33	88	89	75	89	80	7	21	1	2	1	26	
Wesleyan University	CT	1404	867	91	110	121	91	95	87	88	88	8	40	6	9	7	61	
Yale University	CT	2634	1288	222	196	316	97	98	95	96	99	10	72	20	20	24	135	
Gallaudet University	DC	422	287	44	26	24	30	25	37	35	24	1	0	0	0	0	1	
Catholic University of America	DC	1479	1007	52	109	45	71	72	56	57	67	5	20	1	3	1	25	
Howard University	DC	2279	1	1105	15	7	52	100	64	33	43	5	0	35	0	0	36	
American University	DC	2304	1444	83	96	122	73	78	72	76	72	7	44	4	5	5	58	
George Washington University	DC	4172	2493	202	225	436	79	82	71	77	80	7	86	10	13	20	129	
Georgetown University	DC	3147	2138	182	192	246	93	94	86	91	97	8	90	12	14	14	131	
Delaware State University	DE	1154	126	883	19	5	29	25	37	18	75	2	0	5	0	0	5	
Wesley College	DE	741	457	238	22	14	33	38	46	14	50	2	2	2	0	0	3	
University of Delaware	DE	6471	5146	365	340	301	68	75	49	68	76	6	127	10	14	10	161	
Saint Thomas University	FL	449	73	82	201	3	30	25	38	40	67	2	0	0	1	0	2	
Barry University	FL	1265	280	203	361	39	35	41	29	41	63	2	1	1	3	0	6	
Lynn University	FL	913	471	39	54	4	35	45	52	40	14	3	3	1	1	0	4	
Southeastern University	FL	1013	692	78	119	11	46	52	24	68	40	3	6	1	3	0	10	
Saint Leo University	FL	2840	1384	787	269	44	34	37	33	40	75	3	9	8	4	1	21	
Bethune-Cookman University	FL	1375	26	1248	39	3	40	60	38	86	33	3	0	14	1	0	16	
Nova Southeastern University	FL	1077	379	202	296	92	44	45	38	41	48	3	3	2	4	1	10	
Jacksonville University	FL	1030	535	230	62	34	38	38	27	33	50	3	4	2	1	0	7	
Florida Atlantic University	FL	5564	3198	815	1008	277	34	38	38	40	48	4	26	11	16	4	56	
Florida Gulf Coast University	FL	3019	2342	104	334	54	35	41	49	36	40	4	20	2	5	1	27	
Florida Southern College	FL	688	552	42	40	14	44	53	50	45	67	4	7	1	1	0	9	
The University of West Florida	FL	2445	1893	182	112	150	39	45	46	48	24	4	20	3	2	1	27	
Embry Riddle Aeronautical University-Daytona Beach	FL	3653	2240	243	288	218	58	62	44	44	67	4	33	4	6	5	48	
The University of Tampa	FL	1939	1227	80	157	35	54	59	60	60	62	4	17	2	4	1	24	
Palm Beach Atlantic University-West Palm Beach	FL	793	555	75	85	15	48	58	43	55	20	4	8	1	2	0	11	
Flagler College	FL	1071	956	18	36	7	53	77	75	69	67	5	20	1	1	0	22	
Stetson University	FL	923	676	40	92	14	62	68	60	50	62	5	12	1	2	0	16	
Embry Riddle Aeronautical University-Worldwide	FL	1707	1047	163	153	81	50					5	0	0	0	0	0	
Florida International University	FL	8272	1320	974	5080	373	44	45	39	51	52	5	16	17	128	7	168	
Eckerd College	FL	843	610	41	38	18	66	66	81	55	50	5	11	1	1	0	14	

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment				Male Graduation Rate and Mean Test Scale Score						Propensity-Weighted Qualified Candidate Population					
University of South Florida-Main Campus	FL	10475	6822	1012	1467	714	42	48	46	43	63	5	98	23	35	18	174
Florida Institute of Technology	FL	1942	1027	94	112	53	56	60	53	53	59	5	18	2	3	1	25
University of Central Florida	FL	14545	10004	1035	1970	923	58	64	54	60	63	6	211	31	72	26	339
Rollins College	FL	994	689	43	96	26	66	67	78	69	100	6	15	2	4	1	22
University of North Florida	FL	4148	3213	265	284	246	40	46	41	42	45	6	49	6	7	5	67
Florida State University	FL	11629	8489	984	1470	425	67	70	74	65	62	6	196	40	58	12	306
University of Florida	FL	14383	9375	1208	2025	1288	78	83	73	81	84	7	303	57	117	56	534
University of Miami	FL	4650	2306	323	889	225	74	76	80	79	84	7	68	17	50	10	145
Savannah State University	GA	1268	25	1213	7	5	30	0	34			1	0	4	0	0	4
Clark Atlanta University	GA	865	2	792	4	1	38		44	0	100	2	0	7	0	0	7
Albany State University	GA	1120	29	1078	5	2	45	33	50	33		2	0	11	0	0	11
Fort Valley State University	GA	1256	10	1227	9	3	24	33	34	0	0	3	0	10	0	0	10
Georgia Southwestern State University	GA	683	458	183	9	16	30	36	27	50	0	3	2	1	0	0	4
Clayton State University	GA	1058	348	455	42	90	18	22	18	22	41	3	1	2	0	1	4
Augusta State University	GA	1471	944	296	49	48	20	22	11	26	43	3	4	1	0	0	6
Columbus State University	GA	1827	1170	487	83	57	21	29	29	30	10	3	6	4	1	0	11
Shorter College	GA	553	391	95	16	5	50	50	63	0	0	3	4	2	0	0	5
University of West Georgia	GA	3198	2153	741	96	73	27	32	30	38	22	3	12	7	1	0	21
Valdosta State University	GA	3454	2379	880	69	62	34	40	41	52	50	3	17	11	1	1	30
Armstrong Atlantic State University	GA	1471	1059	231	60	66	23	29	34	23	40	3	6	2	0	1	9
Morehouse College	GA	2607	7	2500	9	0	67	100	67	100		4	0	59	0	0	59
Kennesaw State University	GA	5899	4411	443	193	208	30	35	30	34	44	4	37	5	3	3	48
North Georgia College & State University	GA	1675	1470	25	60	30	36	47	43	67	50	4	17	0	2	0	19
Georgia State University	GA	6170	2323	1418	350	814	37	42	44	47	48	4	23	25	7	13	68
Southern Polytechnic State University	GA	2477	1700	394	98	145	26	29	27	14	32	5	13	5	1	2	20
Georgia Southern University	GA	7203	4979	1418	157	88	40	46	45	29	35	5	62	29	2	1	94
Georgia College & State University	GA	1994	1777	87	52	30	36	42	48	25	27	5	20	2	1	0	23
Berry College	GA	533	440	27	14	13	59	63	64	25	60	5	8	1	0	0	10
Covenant College	GA	498	438	22	7	9	58	67	33	60	33	5	9	0	0	0	10
Mercer University	GA	1191	746	195	36	60	51	59	50	41	58	6	15	5	1	2	22
University of Georgia	GA	10053	8409	522	232	708	78	80	70	83	74	6	242	22	13	25	302
Georgia Institute of Technology-Main Campus	GA	8388	5500	514	395	1376	75	77	64	83	81	8	191	25	27	67	309
Emory University	GA	3036	1588	215	106	633	85	88	86	86	88	8	67	15	8	36	126
Chaminade University of Honolulu	HI	417	111	26	34	229	26	27	20	40	24	2	0	0	0	1	2
University of Hawaii at Hilo	HI	1128	395	19	35	581	23	31	29	29	33	3	2	0	0	4	6
Hawaii Pacific University	HI	1280	438	34	52	449	37	36	31	38	48	3	3	0	1	5	9
Brigham Young University-Hawaii	HI	977	343	6	17	186	46	35			56	4	3	0	0	3	6
University of Hawaii at Manoa	HI	5127	1346	97	124	3241	45	38	50	29	56	5	14	2	2	65	83
William Penn University	IA	762	482	142	42	13	20	29	22	19	0	1	1	0	0	0	1
Buena Vista University	IA	780	702	24	24	7	59	65	38	17	71	2	4	0	0	0	4

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score							Propensity-Weighted Qualified Candidate Population					
Grand View University	IA	589	427	49	22	10	48	53	0	0	100	2		2	0	0	0	0	2
Upper Iowa University	IA	923	651	152	26	16	40	48	44	31	0	2		4	1	0	0	0	5
University of Dubuque	IA	710	476	108	33	10	41	48	29	20	50	2		3	1	0	0	0	4
Central College	IA	707	616	15	19	12	65	70	33	50	43	4		9	0	0	0	0	10
University of Northern Iowa	IA	4309	3958	129	80	45	60	64	44	44	58	4		53	2	1	1	1	57
Graceland University-Lamoni	IA	478	258	63	24	19	39	49	15	13	0	4		3	0	0	0	0	3
Morningside College	IA	536	436	14	15	5	43	47	20	7	100	4		4	0	0	0	0	5
Saint Ambrose University	IA	972	805	30	37	7	47	55	38	36	36	4		9	0	1	0	0	10
Simpson College	IA	623	549	25	15	7	66	69	67	50	43	4		9	1	0	0	0	10
Loras College	IA	746	652	8	18	5	59	64	56	50	50	4		10	0	0	0	0	11
Wartburg College	IA	819	650	34	14	21	62	65	40	50	86	5		11	1	0	1	1	13
Dordt College	IA	659	531	3	5	5	67	69	67	0	100	5		10	0	0	0	0	10
Northwestern College	IA	466	427	5	9	6	61	60		67	67	5		7	0	0	0	0	7
Luther College	IA	1010	839	12	26	18	68	74	50	75	100	5		19	0	1	1	1	21
Iowa State University	IA	11449	9446	313	279	380	65	69	54	62	58	6		215	9	10	10	10	245
Drake University	IA	1393	1084	50	25	47	70	71	52	67	77	6		25	1	1	2	2	29
University of Iowa	IA	9148	7781	196	239	313	63	67	43	55	67	6		172	5	8	9	9	194
Cornell College	IA	549	448	17	16	9	70	73	33	71	100	6		12	0	1	0	0	13
Coe College	IA	561	474	17	9	2	67	71	33	50		6		12	0	0	0	0	13
Grinnell College	IA	766	483	40	40	56	83	87	100	70	82	8		19	3	2	3	3	27
Lewis-Clark State College	ID	981	747	15	52	15	21	25	0	33	20	3		3	0	0	0	0	3
Boise State University	ID	5432	4330	105	317	169	28	30	11	30	27	4		27	0	4	1	1	33
Brigham Young University-Idaho	ID	5116	4614	8	172	93	54	67	25	49	59	5		83	0	4	2	2	90
University of Idaho	ID	4405	3652	74	218	105	55	58	29	54	48	5		57	1	6	2	2	66
Northeastern Illinois University	IL	2441	1065	177	640	306	15	28	4	13	22	2		3	0	1	1	1	5
Chicago State University	IL	984	48	797	73	9	6	17	12	19	100	2		0	2	0	0	0	2
Aurora University	IL	614	461	52	76	16	45	51	31	54	50	3		4	0	1	0	0	6
Southern Illinois University Carbondale	IL	8062	5700	1242	318	215	43	51	33	36	30	3		52	12	4	2	2	70
Lewis University	IL	1301	933	89	153	47	56	63	37	44	50	3		11	1	2	1	1	14
Quincy University	IL	464	321	63	18	7	48	52	57	29		3		3	1	0	0	0	4
Saint Xavier University	IL	798	493	110	130	15	50	59	43	42	60	3		5	1	2	0	0	9
Dominican University	IL	472	271	25	116	6	57	73	0	63	50	3		4	0	2	0	0	6
Western Illinois University	IL	5215	4050	364	267	65	52	56	45	46	52	3		41	5	4	1	1	51
Eastern Illinois University	IL	3983	3067	409	120	61	51	58	35	54	37	3		32	4	2	1	1	39
Greenville College	IL	647	522	61	13	5	45	51	37	75	0	4		6	1	0	0	0	7
McKendree University	IL	773	542	128	25	8	56	69	41	67	100	4		8	2	1	0	0	11
Concordia University	IL	412	278	56	39	7	44	87	0	45	67	4		5	0	1	0	0	6
Southern Illinois University Edwardsville	IL	4285	3498	310	98	105	46	51	31	46	40	4		37	3	2	1	1	44
Olivet Nazarene University	IL	1007	876	65	38	12	57	63	23	22	75	4		12	1	0	0	0	13
Monmouth College	IL	631	540	33	31	8	64	68	50	29		4		8	1	0	0	0	9
University of Illinois at Springfield	IL	762	547	97	25	27	66	59	33	75	50	4		7	1	1	0	0	9

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score							Propensity-Weighted Qualified Candidate Population					
North Park University	IL	709	449	57	53	42	43	61	26	42	48	4		7	1	1	1	1	9
Northern Illinois University	IL	8066	5584	871	532	495	49	56	40	37	52	4		75	14	9	8	8	106
University of Illinois at Chicago	IL	6791	3191	394	1038	1689	48	50	28	39	57	4		38	4	18	31	31	91
Elmhurst College	IL	1018	777	45	68	39	58	73	59	60	75	5		15	1	2	1	1	20
Roosevelt University	IL	943	587	104	80	61	44	51	27	32	50	5		8	1	1	1	1	12
Benedictine University	IL	1080	414	65	56	173	55	60	56	44	86	5		7	2	1	5	5	15
Millikin University	IL	836	657	83	30	16	55	65	50	29	33	5		12	2	0	0	0	14
DePaul University	IL	5787	3524	297	614	621	60	66	49	62	67	5		63	7	19	15	15	103
Illinois College	IL	419	350	19	9	2	61	64	13	60		5		6	0	0	0	0	6
Illinois State University	IL	7315	6174	336	282	146	67	72	53	54	73	5		120	8	8	4	4	139
Augustana College	IL	1080	896	29	35	23	72	75	70	80	85	5		18	1	1	1	1	21
Lake Forest College	IL	562	412	37	29	25	62	69	64	73	47	5		9	1	1	0	0	11
North Central College	IL	980	776	40	46	22	52	66	35	59	88	5		15	1	1	1	1	18
Bradley University	IL	2216	1888	111	58	91	75	81	65	71	59	5		46	4	2	2	2	54
Loyola University Chicago	IL	3366	2104	106	285	427	65	70	55	59	61	6		49	3	10	11	11	73
Illinois Institute of Technology	IL	1726	829	52	135	213	63	60	50	32	83	6		18	2	3	8	8	31
Knox College	IL	564	417	21	24	45	72	77	44	56	79	6		12	1	1	2	2	15
Illinois Wesleyan University	IL	878	674	55	20	37	80	83	77	100	78	7		22	3	1	2	2	28
University of Illinois at Urbana-Champaign	IL	16345	10403	799	1057	2264	79	85	65	72	85	7		371	36	59	108	108	574
Wheaton College	IL	1151	967	36	38	88	82	87	63	91	84	7		35	2	3	4	4	44
University of Chicago	IL	2488	1203	100	196	335	90	93	79	81	96	9		57	7	15	22	22	100
Northwestern University	IL	3983	2353	150	225	761	92	93	91	91	99	9		112	12	19	51	51	194
Indiana University-Northwest	IN	854	569	110	106	20	24	30	12	30	40	2		2	0	1	0	0	3
Indiana University-East	IN	445	391	23	8	4	16	23	29	0	33	2		1	0	0	0	0	1
Purdue University-Calumet Campus	IN	2469	1588	308	345	39	23	23	13	19	0	2		4	1	1	0	0	7
Indiana State University	IN	3551	2712	492	46	31	43	45	38	53	30	2		15	4	1	0	0	19
Oakland City University	IN	606	419	110	21	6	49	57	67			2		3	1	0	0	0	4
Purdue University-North Central Campus	IN	1169	922	123	65	7	20	20	8	25	17	2		2	0	0	0	0	3
Indiana University-Southeast	IN	1372	1213	64	18	20	24	33	0	29	0	3		6	0	0	0	0	6
Indiana University-South Bend	IN	1440	1176	71	57	29	24	27	7	47	45	3		5	0	1	0	0	6
Indiana Institute of Technology	IN	930	662	163	22	9	35	54	35	42	0	3		5	1	0	0	0	7
Saint Josephs College	IN	445	345	61	17	3	35	48	27	36	50	3		2	0	0	0	0	3
Indiana University-Kokomo	IN	443	395	10	12	2	17	34	13	22	33	3		2	0	0	0	0	2
University of Southern Indiana	IN	3221	2871	160	36	33	29	38	16	26	43	3		16	1	0	0	0	18
Indiana University-Purdue University-Fort Wayne	IN	3408	2938	152	111	75	25	25	13	14	17	3		11	0	0	0	0	12
University of Saint Francis-Ft Wayne	IN	512	357	45	4	3	38	50	27	17	0	3		3	0	0	0	0	4
Indiana University-Purdue University-Indianapolis	IN	6078	4674	433	157	240	31	33	25	33	45	3		28	3	2	3	3	35
University of Indianapolis	IN	974	704	99	18	11	47	56	41	40	50	3		7	1	0	0	0	9
Franklin College	IN	525	462	20	3	6	51	56	50	67		3		5	0	0	0	0	5

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score						Propensity-Weighted Qualified Candidate Population					
Marian University	IN	530	409	66	14	4	38	48	17	67	0	3	4	0	0	0	0	4
Manchester College	IN	549	476	23	15	3	53	57	9	100	100	4	6	0	1	0	0	6
Huntington University	IN	438	414	3	6	1	55	59	0	100		4	5	0	0	0	0	5
Ball State University	IN	7567	6252	695	159	64	57	61	51	56	72	4	80	12	3	1	97	
Anderson University	IN	852	730	58	11	3	50	55	47	29	75	4	8	1	0	0	10	
Grace College and Theological Seminary	IN	594	458	113	12	5	49	54	0	0		4	6	0	0	0	6	
Trine University	IN	921	670	32	13	7	44	49	25	0	0	4	8	0	0	0	8	
Bethel College	IN	502	428	32	14	9	53	65	0	56	0	4	7	0	0	0	7	
Indiana Wesleyan University	IN	3340	2882	276	75	21	61	67	66	77	25	4	46	7	3	0	56	
Valparaiso University	IN	1319	1052	79	38	24	71	76	65	72	76	5	22	2	1	1	26	
University of Evansville	IN	953	665	27	17	5	55	63	43	67	57	5	11	1	1	0	13	
Hanover College	IN	417	357	5	6	7	50	61	25	100	33	5	6	0	0	0	6	
Purdue University-Main Campus	IN	17990	14162	529	511	1100	69	73	60	62	69	5	310	16	17	30	374	
Indiana University-Bloomington	IN	14894	12041	570	366	680	72	74	50	64	80	5	267	14	13	22	316	
Wabash College	IN	908	717	54	44	13	70	71	65	46	67	5	15	2	1	0	18	
Taylor University	IN	815	729	22	15	19	77	79	71	78	55	6	19	1	1	0	21	
Butler University	IN	1391	1165	52	28	36	71	76	65	68	64	6	29	2	1	1	33	
DePauw University	IN	972	785	58	31	30	85	87	74	71	67	6	25	3	1	1	30	
Earlham College	IN	514	319	29	16	14	63	74	55	67	60	6	8	1	1	0	11	
Rose-Hulman Institute of Technology	IN	1456	1302	30	22	61	77	78	75	100	93	7	40	1	2	3	46	
University of Notre Dame	IN	4457	3520	155	364	282	95	96	92	97	97	9	172	12	33	19	236	
Friends University	KS	688	473	45	24	8	34	47	42	22	0	3	3	0	0	0	4	
Baker University	KS	429	328	51	13	5	54	60	47	80	33	3	4	1	0	0	5	
Emporia State University	KS	1536	1173	104	74	7	43	46	10	39	60	3	10	0	1	0	11	
Pittsburg State University	KS	2893	2435	88	60	23	55	57	50	67	0	3	25	1	1	0	28	
Washburn University	KS	1559	881	62	63	12	38	51	17	33	20	4	9	0	1	0	11	
MidAmerica Nazarene University	KS	497	387	66	18	7	45	58	15	14	0	4	5	0	0	0	6	
Wichita State University	KS	3608	2297	183	179	224	36	41	20	36	46	5	25	2	3	4	34	
Benedictine College	KS	644	506	46	36	5	45	56	71	63	100	5	8	1	1	0	10	
University of Kansas	KS	9554	7743	323	303	393	58	61	45	53	55	5	128	7	8	8	150	
Kansas State University	KS	8475	7163	311	268	101	54	60	19	47	43	5	129	3	7	2	141	
Kentucky State University	KY	876	115	625	5	4	10	26	26	33	0	1	0	2	0	0	2	
Mid-Continent University	KY	503	398	35	8	0	39	47	0	0		1	1	0	0	0	1	
Union College	KY	418	324	64	8	1	24	35	20	20	0	2	1	0	0	0	1	
University of the Cumberlands	KY	730	552	102	15	8	31	38	26	0	0	2	3	1	0	0	3	
Lindsey Wilson College	KY	540	391	45	17	3	27	34	10	100	0	2	2	0	0	0	2	
Morehead State University	KY	2318	2146	113	22	10	31	36	18	7	17	3	12	1	0	0	12	
Campbellsville University	KY	774	551	122	5	5	31	40	38	50		3	3	1	0	0	5	
Eastern Kentucky University	KY	4799	4298	276	50	63	30	38	24	23	5	3	24	2	0	0	27	

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score						Propensity-Weighted Qualified Candidate Population					
Northern Kentucky University	KY	4121	3581	205	43	49	29	34	13	56	25	3	22	1	1	0	24	
Kentucky Wesleyan College	KY	457	331	69	5	2	30	41	10	50		3	2	0	0	0	3	
Thomas More College	KY	639	474	31	3	2	39	46	14	0		4	5	0	0	0	5	
Georgetown College	KY	558	486	51	9	3	58	57	44	100		4	6	1	0	0	7	
Murray State University	KY	2961	2556	186	28	28	42	48	26	33	67	4	26	2	0	1	28	
Berea College	KY	600	400	94	14	12	58	60	63	75	100	5	6	3	1	0	10	
Bellarmine University	KY	712	570	20	11	23	56	64	54	33	75	5	10	0	0	1	11	
University of Kentucky	KY	8552	7406	487	107	216	55	59	48	47	48	5	118	11	2	4	135	
University of Louisville	KY	5647	4624	532	119	166	42	46	41	52	56	5	57	10	3	3	74	
Asbury College	KY	513	463	8	14	15	76	71		100	40	5	10	0	1	0	11	
Transylvania University	KY	456	379	11	4	8	70	71	33	100	64	5	8	0	0	0	9	
Centre College	KY	549	490	28	10	9	84	82	67	0	89	7	16	1	0	0	17	
Southern University and A & M College	LA	2276	37	2204	5	9	22	0	29	0	0	1	0	6	0	0	6	
Grambling State University	LA	1883	22	1613	6	7	29	0	37	100	100	2	0	9	0	0	9	
Xavier University of Louisiana	LA	650	11	447	3	81	30	0	37	0	18	2	0	3	0	0	4	
University of Louisiana Monroe	LA	2159	1505	492	24	45	25	34	22	0	32	2	6	2	0	0	9	
Northwestern State University of Louisiana	LA	1949	1133	578	50	23	26	33	21	31	50	3	6	3	0	0	9	
Louisiana State University at Alexandria	LA	406	333	52	2	2	2	4	1	0	0	3	0	0	0	0	0	
McNeese State University	LA	2365	1783	356	21	27	35	39	26	26	50	3	10	2	0	0	13	
Southeastern Louisiana University	LA	4282	3260	657	93	32	22	31	17	33	20	3	18	3	1	0	23	
Nicholls State University	LA	2019	1514	302	36	23	21	32	10	15	100	3	9	1	0	1	10	
Louisiana Tech University	LA	3515	2601	498	54	27	43	49	37	52	73	4	27	6	1	1	35	
Louisiana College	LA	412	311	68	6	9	29	40	6	100		4	3	0	0	0	3	
University of Louisiana at Lafayette	LA	5331	4056	825	101	100	36	44	24	46	36	4	37	7	2	1	47	
University of New Orleans	LA	3275	2013	462	219	210	21	27	14	16	21	5	15	3	2	2	21	
Louisiana State University and Agricultural & Mechanical College	LA	10729	8755	754	337	359	57	62	51	56	54	6	179	21	11	9	220	
Loyola University New Orleans	LA	1022	646	91	121	37	62	61	65	68	58	6	13	3	5	1	22	
Tulane University of Louisiana	LA	2456	1845	94	96	137	72	76	63	77	60	8	63	4	6	5	79	
Becker College	MA	476	231	48	14	11	27	13	46	0		2	0	0	0	0	1	
Mount Ida College	MA	445	219	73	31	29	27	55	21	34	71	2	1	0	0	0	2	
Nichols College	MA	684	599	44	23	13	31	40	20	25	0	2	3	0	0	0	3	
American International College	MA	623	274	192	59	13	24	35	33	27	20	2	1	1	0	0	3	
Salem State College	MA	2221	1657	157	144	62	37	44	43	37	40	3	11	2	1	0	15	
Lasell College	MA	424	322	41	20	14	40	47	63	43	56	3	3	1	0	0	4	
University of Massachusetts-Boston	MA	3056	1496	403	220	493	26	33	28	21	43	3	9	3	2	5	19	
Worcester State College	MA	1414	1085	79	72	51	42	49	41	21	38	3	10	1	0	0	12	
Suffolk University	MA	2280	1270	70	127	122	48	60	25	43	54	3	14	1	2	2	18	
Wentworth Institute of Technology	MA	2707	1989	98	93	140	54	55	85	73	65	3	20	2	2	2	27	
Fitchburg State College	MA	1543	1286	49	39	28	47	54	19	25	33	3	12	0	0	0	13	

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score							Propensity-Weighted Qualified Candidate Population				
Massachusetts Maritime Academy	MA	988	925	13	16	17	52	55	0	100	67	3	9	0	1	0	10	
Westfield State College	MA	2090	1733	81	56	27	54	60	54	23	25	3	19	1	0	0	21	
Massachusetts College of Liberal Arts	MA	556	475	25	33	1	58	58	33	57	100	3	5	0	1	0	6	
Springfield College	MA	1329	900	149	51	15	54	69	50	40	83	4	13	3	1	0	17	
Bridgewater State College	MA	2858	2302	156	78	39	46	53	45	33	33	4	26	2	1	0	29	
Framingham State College	MA	1083	881	67	55	27	45	50	36	56	53	4	9	1	1	0	12	
Curry College	MA	943	671	59	32	11	51	54	39	33	50	4	8	1	0	0	9	
Western New England College	MA	1512	1346	42	34	32	54	59	55	43	22	4	19	1	1	0	21	
University of Massachusetts-Dartmouth	MA	3726	3084	236	86	103	43	46	38	48	37	4	34	4	2	1	41	
Assumption College	MA	896	665	22	25	23	75	76	100	89	60	4	12	1	1	0	14	
Emmanuel College	MA	472	304	26	30	24	61	66	60	45	29	4	5	1	1	0	6	
Endicott College	MA	823	672	7	25	10	62	69	100	57	0	4	11	0	1	0	12	
Merrimack College	MA	934	729	31	20	14	74	75	67	67	43	4	13	1	1	0	15	
University of Massachusetts-Lowell	MA	4084	3005	189	224	345	44	51	32	39	49	4	37	2	4	5	48	
Stonehill College	MA	939	842	33	41	14	77	82	77	73	88	5	21	1	2	0	24	
University of Massachusetts Amherst	MA	9657	6972	455	350	832	66	70	56	51	68	5	146	13	10	23	192	
Gordon College	MA	570	487	10	17	12	77	76	100	83	69	5	11	1	1	0	13	
Clark University	MA	888	610	16	19	29	73	72	50	73	59	6	14	0	1	1	17	
Wheaton College	MA	626	488	30	20	14	74	82	71	81	70	6	13	1	1	0	16	
Emerson College	MA	1421	1030	27	88	62	81	76	71	59	78	6	28	1	3	2	35	
Bentley University	MA	2389	1472	55	92	175	81	85	70	79	90	6	45	2	5	8	60	
Babson College	MA	1080	453	44	97	120	87	88	67	93	89	7	16	2	6	6	29	
Hampshire College	MA	600	448	26	36	21	65	67	60	60	80	7	12	1	2	1	15	
College of the Holy Cross	MA	1261	853	59	76	53	96	98	92	98	100	7	33	4	5	3	44	
Boston University	MA	6792	3327	164	401	951	80	80	71	71	84	7	104	8	20	42	173	
Northeastern University	MA	7902	4499	334	379	598	68	73	63	58	72	7	128	14	16	22	180	
Worcester Polytechnic Institute	MA	2278	1760	64	106	135	77	81	63	65	88	7	56	3	5	6	69	
Boston College	MA	4594	3204	212	287	452	89	92	86	85	89	8	133	14	20	24	191	
Brandeis University	MA	1397	733	63	68	140	90	90	81	71	86	8	32	4	4	8	48	
Amherst College	MA	829	367	75	65	64	94	96	88	87	98	9	18	6	5	4	33	
Williams College	MA	998	642	77	88	100	95	98	90	91	92	9	32	6	7	6	52	
Tufts University	MA	2459	1450	111	136	295	91	93	81	89	95	9	69	8	11	19	107	
Massachusetts Institute of Technology	MA	2247	826	217	382	430	92	96	81	84	98	9	43	16	32	30	121	
Harvard University	MA	3601	1708	257	230	497	97	98	93	94	98	9	90	22	21	35	168	
University of Maryland Eastern Shore	MD	1390	116	1127	19	23	37	36	39	42	35	1	0	4	0	0	5	
Coppin State University	MD	595	4	485	6	0	11	0	16	0	0	1	0	1	0	0	1	
Morgan State University	MD	2476	46	2239	23	16	24	17	33	25	0	2	0	11	0	0	11	
Frostburg State University	MD	2222	1573	487	56	44	38	50	40	35	35	3	12	5	1	0	18	

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score							Propensity-Weighted Qualified Candidate Population					
Stevenson University	MD	800	615	77	11	30	63	69	49	50	53	4		9	1	0	0	11	
Hood College	MD	400	283	47	13	8	57	68	58	100	63	4		5	1	1	0	6	
Towson University	MD	5997	4271	545	153	280	62	68	70	65	62	4		70	15	4	6	95	
Mount St. Mary's University	MD	647	539	41	27	20	59	62	63	70	67	4		8	1	1	0	10	
McDaniel College	MD	759	599	38	19	19	70	74	68	86	67	5		12	1	1	0	14	
Salisbury University	MD	3004	2422	350	83	87	58	71	57	74	66	5		46	9	3	2	61	
Washington College	MD	522	439	21	5	3	82	80	79	50	50	5		11	1	0	0	12	
Goucher College	MD	454	310	31	15	12	62	66	81	80	63	6		7	1	1	0	9	
University of Maryland-Baltimore County	MD	4539	2506	612	173	992	56	63	60	74	49	6		52	20	8	21	101	
Loyola University Maryland	MD	1522	1302	52	64	46	85	86	90	86	88	6		37	3	3	2	45	
St. Mary's College of Maryland	MD	826	641	55	34	28	73	79	52	62	64	6		18	2	1	1	22	
Bowie State University	MD	1384	41	1261	18	17	36	33	42	25	22	7		1	34	0	0	35	
University of Maryland-College Park	MD	12658	7743	1317	640	1894	80	84	68	76	87	7		254	58	35	86	432	
Johns Hopkins University	MD	2692	1346	130	156	638	87	88	83	86	94	9		60	9	13	41	123	
Husson University	ME	778	676	61	19	5	25	37	0	0	0	3		4	0	0	0	4	
University of Southern Maine	ME	2104	1958	55	24	39	31	34	40	29	38	3		12	1	0	0	13	
Maine Maritime Academy	ME	718	702	0	7	2	55	54	100	50		4		8	0	0	0	8	
University of Maine at Farmington	ME	693	586	11	7	6	56	59	60	0	33	4		7	0	0	0	8	
University of New England	ME	600	507	17	4	9	54	51	50		50	4		6	0	0	0	7	
University of Maine	ME	4217	3291	71	37	51	58	60	48	60	45	4		47	1	1	1	50	
Bates College	ME	819	639	37	22	48	91	91	57	86	88	7		24	1	1	2	30	
Colby College	ME	848	611	25	18	57	91	91	91	71	97	8		25	2	1	3	31	
Bowdoin College	ME	838	585	43	73	96	95	93	77	92	89	9		28	3	6	6	43	
Olivet College	MI	610	429	123	20	3	30	39	27	50	0	2		2	1	0	0	3	
Wayne State University	MI	5195	2855	1066	133	482	29	44	9	25	47	3		19	2	1	5	27	
Siena Heights University	MI	404	210	47	20	3	36	40	25	18	100	3		1	0	0	0	2	
College for Creative Studies	MI	664	440	47	35	29	56	54	35	73	68	3		4	0	1	0	5	
Northwood University	MI	1496	1061	189	31	24	46	54	31	22	40	3		10	2	0	0	13	
University of Michigan-Flint	MI	1516	1082	145	54	28	33	38	16	31	44	3		7	1	1	0	9	
Saginaw Valley State University	MI	2824	2187	220	50	26	36	40	13	30	50	3		16	1	0	0	17	
Ferris State University	MI	4964	4228	260	89	86	41	43	17	48	37	3		33	1	1	1	36	
Northern Michigan University	MI	3614	3161	57	47	28	40	46	20	38	31	3		26	0	1	0	27	
Eastern Michigan University	MI	5205	3454	969	136	134	31	41	20	29	33	4		30	7	2	1	39	
Lake Superior State University	MI	1071	862	13	10	3	41	46	20	25	75	4		8	0	0	0	9	
University of Detroit Mercy	MI	948	591	128	46	32	50	67	36	38	63	4		8	2	1	1	11	
Oakland University	MI	4139	3275	240	84	195	40	46	24	48	42	4		32	2	2	2	37	
Madonna University	MI	402	295	25	14	10	44	51	13	0	0	4		3	0	0	0	3	
Western Michigan University	MI	8852	7216	533	232	176	52	56	51	50	41	4		85	10	4	2	101	
Cornerstone University	MI	547	487	23	27	6	54	53	25	50	50	4		5	0	1	0	6	

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score							Propensity-Weighted Qualified Candidate Population					
Adrian College	MI	753	563	38	18	2	42	55	25	75	0	4	7	0	1	0	8		
Central Michigan University	MI	8153	6702	341	170	118	55	59	44	47	55	4	95	6	4	2	106		
Andrews University	MI	743	296	186	74	85	49	57	45	56	61	4	4	3	2	2	11		
Spring Arbor University	MI	700	621	47	11	8	52	61	0	20	50	4	9	0	0	0	9		
Lawrence Technological University	MI	1140	744	68	17	39	45	51	17	0	55	4	9	0	0	1	10		
Aquinas College	MI	599	487	23	25	13	58	49	40	50	63	4	6	0	1	0	7		
University of Michigan-Dearborn	MI	2154	1452	113	64	158	53	55	38	42	51	4	19	2	1	3	25		
Grand Valley State University	MI	7261	6294	325	195	222	54	57	54	38	45	5	97	8	4	4	112		
Michigan State University	MI	15542	11852	968	446	853	74	79	55	59	75	5	281	27	14	26	348		
Albion College	MI	857	740	32	5	25	69	72	67	25	60	5	16	1	0	1	18		
Hope College	MI	1233	1107	23	39	27	67	73	46	75	82	6	27	1	2	1	30		
Calvin College	MI	1807	1494	17	21	62	74	77	14	100	63	6	38	0	1	2	41		
Alma College	MI	591	527	24	19	10	64	71	29	100	50	6	12	0	1	0	14		
Kettering University	MI	1652	1288	56	38	70	62	64	65	50	62	6	30	2	1	2	35		
Michigan Technological University	MI	4281	3593	67	60	42	62	65	54	86	80	6	84	2	3	2	91		
Kalamazoo College	MI	598	422	22	23	33	73	76	40	100	84	7	13	1	2	1	16		
University of Michigan-Ann Arbor	MI	12621	8187	655	527	1523	88	91	70	78	91	7	313	32	32	78	454		
Metropolitan State University	MN	949	593	108	48	109	17	32	0		20	2	2	0	0	0	2		
University of Minnesota-Crookston	MN	667	474	39	8	7	38	38	20	33	67	3	3	0	0	0	3		
Minnesota State University-Moorhead	MN	2560	1968	68	31	37	31	44	7	31	75	3	13	0	0	1	14		
Bemidji State University	MN	1712	1483	26	8	10	50	53	0	0	33	3	14	0	0	0	14		
Saint Cloud State University	MN	5926	4591	240	67	154	45	52	52	64	40	3	43	4	1	1	50		
Southwest Minnesota State University	MN	1052	781	56	18	20	33	46	17	50	0	4	8	0	0	0	8		
Minnesota State University-Mankato	MN	5744	4734	239	75	147	49	53	42	42	56	4	53	4	1	2	60		
Winona State University	MN	2810	2426	58	30	59	52	56	38	0	30	4	29	1	0	0	30		
Saint Mary's University of Minnesota	MN	684	501	22	17	11	50	60	67	29	20	4	7	1	0	0	8		
North Central University	MN	425	321	17	21	12	35	39	29	14	25	4	3	0	0	0	3		
The College of Saint Scholastica	MN	767	604	18	10	15	58	67	0	67	67	4	10	0	0	0	10		
Concordia University-Saint Paul	MN	548	327	62	8	40	40	53	17		53	4	4	0	0	1	5		
University of Minnesota-Duluth	MN	4836	4359	79	55	132	49	51	38	41	42	5	60	1	1	2	64		
Augsburg College	MN	1168	864	81	29	70	58	59	43	22	56	5	14	2	0	1	17		
Hamline University	MN	863	610	52	22	46	73	73	40	30	83	5	12	1	0	1	15		
Saint Johns University	MN	1891	1678	26	28	41	83	84	50	100	56	5	42	1	2	1	45		
Bethel University	MN	1100	1000	24	12	22	72	76	33	50	67	5	23	0	0	1	24		
University of St Thomas	MN	2995	2493	99	72	125	73	73	55	50	71	6	60	3	2	4	69		
Northwestern College	MN	831	746	24	13	36	60	58	0	50	54	6	14	0	0	1	16		
Concordia College at Moorhead	MN	1074	976	13	6	16	7	5	0	25	7	6	2	0	0	0	2		
University of Minnesota-Morris	MN	645	492	20	15	18	63	66	54	33	45	6	12	1	0	0	13		
University of Minnesota-Twin Cities	MN	12731	9583	609	264	1196	64	68	44	58	61	6	235	16	10	35	296		
Gustavus Adolphus College	MN	1055	919	27	21	55	84	82	100	86	88	7	29	2	1	3	35		

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

			Full-time Male Enrollment				Male Graduation Rate and Mean Test Scale Score							Propensity-Weighted Qualified Candidate Population				
St. Olaf College	MN	1363	1169	20	27	60	85	87	46	100	85	7		43	1	2	3	48
Macalester College	MN	784	562	22	32	59	88	88	80	75	89	8		24	1	2	3	31
Carleton College	MN	951	723	41	47	65	92	95	75	90	93	9		35	3	4	4	46
Missouri Baptist University	MO	555	392	67	24	4	34	42	10	33		2		1	0	0	0	2
Lincoln University	MO	863	304	488	9	4	19	34	18	0	0	2		1	1	0	0	2
Missouri Western State University	MO	1606	1295	211	41	14	27	31	15	35	50	2		5	1	0	0	6
Missouri Valley College	MO	834	463	197	46	28	25	35	17	19	45	3		2	1	0	0	4
Central Methodist University-College of Liberal Arts & Sciences	MO	497	395	58	11	1	23	43	4	100	50	3		3	0	0	0	3
Lindenwood University	MO	2623	1617	174	50	22	39	45	32	0	33	3		11	1	0	0	12
Harris-Stowe State University	MO	456	42	400	3	1	17	38	11			3		0	1	0	0	1
University of Central Missouri	MO	3332	2595	217	57	32	47	55	37	36	10	3		26	2	1	0	29
Fontbonne University	MO	469	353	95	8	4	45	57	44	33		3		4	1	0	0	5
Southwest Baptist University	MO	767	648	74	14	2	47	58	8	25	67	4		8	0	0	0	8
Evangel University	MO	677	528	46	30	8	37	40	46	20	71	4		4	1	0	0	6
Southeast Missouri State University	MO	2935	2354	248	40	20	46	52	44	30	40	4		26	4	0	0	30
Northwest Missouri State University	MO	2348	1950	130	40	22	48	51	44	59	46	4		21	2	1	0	24
Missouri Southern State University	MO	1583	1242	104	34	16	30	35	22	20	43	4		9	1	0	0	10
Maryville University of Saint Louis	MO	444	390	14	9	12	58	61	15	100	60	4		6	0	0	0	6
University of Missouri-St Louis	MO	2480	1670	258	33	94	42	47	35	100	58	4		19	4	1	2	26
College of the Ozarks	MO	559	523	9	8	4	59	59	100	50		5		8	0	0	0	9
Columbia College	MO	2967	1870	411	176	86	46	47	18	100		5		24	3	9	0	36
Westminster College	MO	545	391	30	9	6	63	64	38	33	40	5		7	1	0	0	8
Missouri State University	MO	5766	4935	201	125	99	49	54	46	30	56	5		72	4	2	2	80
Drury University	MO	1136	1003	35	20	16	58	63	83	63	67	5		17	1	1	0	19
Rockhurst University	MO	586	479	24	30	29	62	65	45	57	56	5		9	1	1	1	11
William Jewell College	MO	428	358	25	9	2	62	69	67	100		5		7	1	0	0	9
Webster University	MO	1132	841	106	29	17	55	60	57	91	43	6		17	3	2	0	22
Park University	MO	438	270	34	9	2	29	49	15	29	0	6		4	0	0	0	5
University of Missouri-Kansas City	MO	2471	1408	281	109	173	40	47	23	48	55	6		22	4	3	4	33
University of Missouri-Columbia	MO	10404	8824	548	193	255	65	70	56	66	77	6		204	17	8	9	237
Saint Louis University-Main Campus	MO	2722	1935	117	98	221	73	76	70	65	71	6		49	5	4	7	64
Missouri University of Science and Technology	MO	3518	2932	149	64	97	60	62	63	62	50	6		65	6	3	2	76
Truman State University	MO	2269	1796	108	48	51	66	70	58	70	68	7		49	4	2	2	57
Washington University in St Louis	MO	2996	1855	210	76	418	94	94	91	98	94	9		94	17	7	28	147
Alcorn State University	MS	831	37	768	10	4	32	13	40	0		1		0	3	0	0	3
Mississippi Valley State University	MS	871	36	805	8	3	26	22	29	0		1		0	2	0	0	2
Jackson State University	MS	2155	101	2037	13	3	32	40	42	100	0	2		0	13	0	0	13
Delta State University	MS	1098	765	306	12	14	36	44	38	0		2		3	2	0	0	5
William Carey University	MS	435	305	86	7	4	40	44	42	0		3		2	1	0	0	3

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

			Full-time Male Enrollment				Male Graduation Rate and Mean Test Scale Score							Propensity-Weighted Qualified Candidate Population				
University of Mississippi Main Campus	MS	5445	4473	535	61	86	53	58	43	33	41	4		54	8	1	1	64
University of Southern Mississippi	MS	4128	2766	1033	53	58	40	48	37	40	18	4		28	13	1	0	42
Mississippi College	MS	1054	745	195	6	7	52	62	26	33	100	4		11	2	0	0	13
Mississippi State University	MS	6569	5200	1107	61	83	56	63	47	63	72	5		88	23	2	2	116
Belhaven University	MS	671	320	239	12	2	31	34	42	67	0	5		3	5	0	0	8
Millsaps College	MS	479	383	60	8	19	65	69	61	75	75	6		9	2	0	1	12
Montana State University-Northern	MT	488	359	11	13	5	36	35	0	0		2		2	0	0	0	2
The University of Montana-Western	MT	488	386	10	11	38	25	43	0	25	14	3		2	0	0	0	3
Montana State University-Billings	MT	839	702	6	45	14	24	31	0	38	25	3		4	0	1	0	5
The University of Montana	MT	4697	3859	40	74	59	40	42	11	25	48	4		39	0	1	1	41
Montana Tech of the University of Montana	MT	1050	815	8	16	3	39	41	0	0	33	4		8	0	0	0	8
Carroll College	MT	543	446	3	11	6	62	62		40	100	5		7	0	0	0	8
Montana State University	MT	4946	4398	33	51	67	44	49	9	40	46	5		58	0	1	1	60
Livingstone College	NC	579	6	564	1	0	21	0	27	0		1		0	2	0	0	2
Shaw University	NC	813	11	720	2	0	23	27	27	0		1		0	2	0	0	2
Saint Augustines College	NC	746	8	684	7	0	8		8			1		0	1	0	0	1
North Carolina Central University	NC	1751	96	1517	21	13	40	27	49	71	33	1		0	7	0	0	8
Fayetteville State University	NC	1392	147	1092	53	21	31	27	39	37	33	1		0	4	0	0	5
Elizabeth City State University	NC	1060	103	891	14	4	29	30	45	0	0	1		0	4	0	0	4
Chowan University	NC	470	185	247	10	0	22	43	22	13	50	1		0	1	0	0	1
Winston-Salem State University	NC	1615	113	1421	6	12	34	36	39	17	100	2		0	8	0	0	9
North Carolina Wesleyan College	NC	486	161	222	14	5	55	68	56	40	75	2		1	2	0	0	3
North Carolina A & T State University	NC	3721	176	3350	63	45	30	18	39	21	38	2		0	20	0	0	20
Johnson C Smith University	NC	606	1	599	2	0	28		39			3		0	6	0	0	6
University of North Carolina at Pembroke	NC	1795	785	554	68	48	27	29	48	17	20	3		3	7	0	0	11
Greensboro College	NC	481	317	96	11	1	37	44	35	0	0	3		2	1	0	0	3
Mars Hill College	NC	561	384	136	16	5	27	42	16	75	20	3		2	1	0	0	3
Pfeiffer University	NC	427	304	62	19	2	54	59	50	50	0	3		3	1	0	0	4
Methodist University	NC	954	596	148	50	17	30	37	31	24	0	3		4	1	0	0	6
Gardner-Webb University	NC	778	565	147	13	4	48	55	29	33	50	3		6	1	0	0	7
East Carolina University	NC	7616	5889	899	159	190	50	54	56	45	55	3		57	15	2	3	77
Western Carolina University	NC	2867	2419	217	48	27	47	50	45	54	44	3		22	3	1	0	26
Lenoir-Rhyne University	NC	464	324	63	10	11	52	55	56	29	60	3		3	1	0	0	5
Wingate University	NC	656	450	83	18	13	47	53	54	40	50	4		5	2	0	0	7
Belmont Abbey College	NC	530	340	58	31	8	31	33	24	64	0	4		2	0	1	0	4
University of North Carolina at Greensboro	NC	3935	2672	614	110	182	43	52	58	45	55	4		29	12	2	3	46
University of North Carolina at Charlotte	NC	7499	5787	797	267	409	46	50	51	63	60	4		69	16	7	8	101
High Point University	NC	1055	776	161	24	13	55	59	54	30	75	4		11	3	0	0	15
Catawba College	NC	563	432	98	2	2	35	43	33	0	0	4		4	1	0	0	6

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score						Propensity-Weighted Qualified Candidate Population				
University of North Carolina School of the Arts	NC	445	362	43	22	10	59	58	67	60	30	5	6	1	1	0	8
Guilford College	NC	923	691	121	24	20	52	71	47	43	50	5	13	3	1	0	17
Appalachian State University	NC	6826	6044	225	115	71	62	66	50	43	60	5	108	5	2	2	117
University of North Carolina-Wilmington	NC	4266	3615	195	127	84	64	68	55	50	52	5	74	5	3	2	84
University of North Carolina at Asheville	NC	1198	1045	31	29	23	51	60	60	60	80	5	19	1	1	1	21
Campbell University Inc	NC	1452	1044	194	61	0	49	53	36	38		5	17	3	1	0	21
North Carolina State University at Raleigh	NC	12009	9647	898	300	620	67	72	60	59	76	5	208	27	10	19	264
Elon University	NC	2006	1606	128	47	25	80	79	78	69	75	6	46	6	2	1	55
University of North Carolina at Chapel Hill	NC	7027	5090	629	335	517	82	88	76	88	86	7	188	33	23	25	269
Wake Forest University	NC	2149	1769	143	63	113	87	89	80	79	90	7	66	8	4	6	84
Davidson College	NC	817	618	44	24	34	92	95	86	92	90	8	28	3	2	2	35
Duke University	NC	3299	1733	250	175	716	94	95	91	96	97	9	89	20	17	50	176
Minot State University	ND	837	660	37	17	5	23	30	14	14	0	3	3	0	0	0	3
Jamestown College	ND	455	394	14	11	5	33	44	17	20	80	3	3	0	0	0	3
University of Mary	ND	648	536	49	14	1	44	58	33	50	67	4	7	1	0	0	7
University of North Dakota	ND	4770	4259	72	50	55	52	55	40	33	53	4	56	1	1	1	59
North Dakota State University-Main Campus	ND	5745	5201	104	38	71	47	48	56	17	23	5	75	3	0	1	79
Doane College	NE	436	338	23	21	4	65	69	29	0	50	2	3	0	0	0	3
Chadron State College	NE	764	600	25	28	2	43	51	0	30	50	3	6	0	0	0	6
Concordia University	NE	496	429	21	14	5	53	65	25	50	50	4	6	0	0	0	6
Hastings College	NE	582	509	23	30	4	56	64	60	50	67	4	7	0	1	0	8
University of Nebraska at Kearney	NE	2157	1672	43	94	13	52	60	0	51	67	4	24	0	2	0	26
University of Nebraska at Omaha	NE	4219	3468	207	151	95	41	44	25	36	42	4	37	2	2	1	42
Creighton University	NE	1548	1193	42	49	159	73	77	61	86	77	6	30	1	3	5	40
University of Nebraska-Lincoln	NE	9345	7766	220	327	239	61	64	44	53	67	6	164	5	10	7	187
Nebraska Wesleyan University	NE	706	634	12	16	13	66	66	50	67	88	6	14	0	1	1	15
Plymouth State University	NH	2191	1810	13	28	13	49	53	50	67	57	3	14	0	1	0	15
Southern New Hampshire University	NH	1406	782	17	17	14	44	50	50	83	56	3	6	0	0	0	7
Franklin Pierce University	NH	920	712	26	16	10	46	48	58	55	40	3	6	0	0	0	7
Keene State College	NH	2065	1926	23	20	9	55	56	100	55	33	3	19	1	0	0	21
Daniel Webster College	NH	607	347	21	13	5	48	50	25	100	0	4	4	0	1	0	4
Saint Anselm College	NH	789	665	13	14	8	69	77	57	57	67	5	14	0	0	0	15
University of New Hampshire-Main Campus	NH	5122	4169	95	103	141	69	72	50	61	59	5	90	2	3	3	99
Dartmouth College	NH	2064	1200	134	128	271	94	97	86	90	97	9	63	10	11	19	104
Bloomfield College	NJ	568	120	233	137	23	29	36	36	42	30	1	0	1	1	0	2
New Jersey City University	NJ	1727	535	287	552	153	25	36	28	35	43	2	2	1	3	1	7
Centenary College	NJ	729	467	69	72	15	38	49	44	54	50	2	3	1	1	0	4
Kean University	NJ	3388	1646	642	598	261	33	48	35	40	50	2	9	4	5	2	21

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score						Propensity-Weighted Qualified Candidate Population					
Saint Peter's College	NJ	915	273	180	198	106	43	55	39	42	59	3	2	2	2	1	8	
Fairleigh Dickinson University-Metropolitan Campus	NJ	857	326	118	153	64	34	42	31	41	32	3	2	1	2	0	5	
William Paterson University of New Jersey	NJ	3283	1843	415	524	182	37	49	40	37	53	3	14	4	5	2	25	
Montclair State University	NJ	4490	2532	371	794	319	55	63	61	59	64	3	29	7	15	5	56	
Caldwell College	NJ	423	206	40	49	6	46	50	36	38	50	3	2	0	1	0	3	
Fairleigh Dickinson University-College at Florham	NJ	1059	748	77	72	31	50	59	38	50	39	4	9	1	1	0	12	
Rider University	NJ	1580	1143	116	75	53	55	60	55	40	51	4	14	2	1	1	19	
Rutgers University-Newark	NJ	2474	771	345	429	715	52	62	57	46	64	4	11	8	9	15	43	
Monmouth University	NJ	1878	1445	89	89	46	52	60	60	38	57	4	21	2	1	1	25	
Rutgers University-Camden	NJ	1467	991	166	106	147	57	59	55	53	61	4	14	4	2	3	23	
Rowan University	NJ	3866	3101	250	224	128	58	68	44	46	64	4	51	4	5	3	62	
The Richard Stockton College of New Jersey	NJ	2521	2003	181	116	149	61	67	51	57	52	5	36	4	3	3	46	
Seton Hall University	NJ	2041	1209	186	187	117	56	65	55	49	57	5	21	5	5	2	33	
Ramapo College of New Jersey	NJ	2070	1633	116	172	91	62	73	72	54	50	5	32	4	5	2	42	
New Jersey Institute of Technology	NJ	3490	1307	314	645	730	55	52	43	57	64	5	20	7	20	19	66	
Drew University	NJ	601	364	35	42	32	75	74	88	81	88	5	8	2	2	1	13	
Rutgers University-New Brunswick	NJ	13587	7393	917	1097	3410	71	75	67	69	78	6	183	34	46	117	380	
The College of New Jersey	NJ	2506	1779	132	201	152	82	88	60	82	90	7	61	5	12	7	85	
Stevens Institute of Technology	NJ	1594	861	54	149	168	77	78	80	71	100	7	26	3	8	9	45	
Princeton University	NJ	2558	1390	162	198	357	96	97	94	95	95	9	73	14	19	24	130	
New Mexico Highlands University	NM	725	124	106	408	14	12	14	10	26	0	2	0	0	2	0	2	
Eastern New Mexico University-Main Campus	NM	1121	577	97	321	11	21	31	24	25	25	2	2	0	2	0	4	
New Mexico State University-Main Campus	NM	5387	2101	177	2143	84	39	46	26	43	29	3	17	1	30	1	50	
University of New Mexico-Main Campus	NM	6724	3143	237	2326	267	38	47	36	42	45	4	35	3	43	4	86	
New Mexico Institute of Mining and Technology	NM	827	556	9	182	31	48	50	50	44	43	6	10	0	5	1	16	
University of Nevada-Las Vegas	NV	7044	3397	511	879	1370	37	41	32	38	43	3	25	5	11	14	55	
University of Nevada-Reno	NV	4911	3333	135	389	358	43	49	48	39	59	4	39	3	7	7	55	
CUNY York College	NY	1520	143	700	279	274	19	37	20	21	33	1	0	1	1	1	3	
Dominican College of Blauvelt	NY	437	198	70	88	34	37	64	28	43	40	2	1	0	1	0	2	
Five Towns College	NY	700	420	122	88	10	40	41	39	53	63	2	2	1	1	0	3	
CUNY Lehman College	NY	1808	193	517	897	118	28	49	33	32	40	2	1	3	5	1	9	
Medaille College	NY	624	452	56	10	6	39	48	28	36	0	2	3	0	0	0	3	
Nyack College	NY	665	190	183	143	73	43	55	39	41	50	2	1	1	1	1	5	
CUNY John Jay College Criminal Justice	NY	3893	1194	628	1503	461	25	35	28	27	36	2	5	4	9	3	20	
St. Francis College	NY	1001	496	158	127	30	49	53	45	59	20	2	3	1	2	0	6	
Saint Thomas Aquinas College	NY	581	402	43	86	13	48	61	40	45	50	2	3	0	1	0	4	
Long Island University-Brooklyn Campus	NY	873	179	278	91	132	15	36	16	18	12	2	1	1	0	0	2	
Farmingdale State College	NY	2944	1613	233	274	152	15	17	4	18	21	3	4	0	1	1	6	
New York Institute of Technology-Manhattan Campus	NY	867	204	77	129	103	45	55	23	36	44	3	2	0	1	1	4	
CUNY City College	NY	4338	814	796	1236	937	35	46	35	24	50	3	7	8	10	11	36	

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

			Full-time Male Enrollment				Male Graduation Rate and Mean Test Scale Score						Propensity-Weighted Qualified Candidate Population					
SUNY College at Buffalo	NY	3293	2020	453	171	70	37	42	36	29	27	3	15	5	2	0	22	
Long Island University-C W Post Campus	NY	1696	896	173	115	70	37	73	50	57	64	3	12	3	2	1	18	
Mount Saint Mary College	NY	465	378	25	44	15	44	55	39	47	57	3	4	0	1	0	5	
New York Institute of Technology-Old Westbury	NY	2750	582	106	118	198	44	46	26	44	58	3	5	1	2	3	10	
SUNY College at Old Westbury	NY	1148	345	324	177	78	37	22	52	32	29	3	1	5	2	1	9	
CUNY College of Staten Island	NY	3758	2422	297	466	453	19	30	12	15	24	3	13	1	2	3	19	
The College of Saint Rose	NY	812	610	31	45	13	72	76	88	53	90	4	10	1	1	0	12	
CUNY Queens College	NY	4324	2032	290	622	1070	43	61	46	47	51	4	26	5	11	15	57	
Molloy College	NY	512	353	66	41	40	49	69	34	50	62	4	5	1	1	1	7	
SUNY College at Potsdam	NY	1504	1092	56	46	21	45	50	56	26	50	4	11	1	0	0	13	
CUNY Brooklyn College	NY	3702	1724	701	395	677	37	51	32	33	46	4	18	8	5	9	40	
SUNY College at Plattsburgh	NY	2348	1667	90	92	46	50	55	48	44	43	4	19	2	2	1	23	
Saint Bonaventure University	NY	910	656	39	19	24	69	74	38	60	60	4	10	1	0	0	12	
SUNY Maritime College	NY	1225	925	73	100	48	49	51	47	29	50	4	11	1	1	1	15	
Niagara University	NY	1183	871	39	24	19	60	66	45	46	57	4	14	1	0	0	15	
SUNY College at Cortland	NY	2560	1843	94	167	43	56	65	39	44	47	4	29	1	3	1	34	
Marymount Manhattan College	NY	450	349	31	43	12	45	50	41	58	29	4	4	1	1	0	6	
Saint Josephs College-Suffolk Campus	NY	820	669	24	55	12	51	62	67	52	0	4	10	1	1	0	12	
Adelphi University	NY	1315	738	95	90	66	56	69	50	47	68	4	12	2	2	1	17	
Pace University-New York	NY	2357	1110	201	260	267	49	57	45	48	63	4	15	4	5	5	30	
St. John's University-New York	NY	5501	2194	780	736	935	57	65	52	54	66	4	34	16	17	20	88	
Le Moyne College	NY	914	750	29	42	18	78	81	64	62	88	4	15	1	1	1	17	
SUNY College at Brockport	NY	2733	2049	127	73	34	60	61	58	63	60	4	30	3	2	1	36	
Touro College	NY	1939	1110	225	153	115	25	35	21	21	21	4	9	2	1	1	13	
Saint John Fisher College	NY	1101	970	47	21	20	72	74	56	71	69	4	17	1	1	0	19	
CUNY Hunter College	NY	3612	1504	292	607	870	33	44	40	36	44	4	16	5	10	12	42	
Hartwick College	NY	615	386	19	31	6	50	56	47	50	67	5	6	0	1	0	7	
SUNY at Fredonia	NY	2215	1995	74	61	40	58	65	20	50	13	5	35	1	2	0	37	
Manhattanville College	NY	547	265	42	75	16	48	60	66	65	42	5	4	1	2	0	8	
SUNY at Albany	NY	6380	3713	485	473	357	58	62	68	60	68	5	62	15	14	9	100	
Canisius College	NY	1429	1148	69	33	22	65	71	44	63	22	5	22	1	1	0	25	
Manhattan College	NY	1520	1142	36	147	57	70	76	67	74	53	5	23	1	5	1	31	
SUNY College at Oswego	NY	3175	2793	124	134	56	54	58	47	43	46	5	44	3	3	1	50	
SUNY at Purchase College	NY	1644	934	131	151	50	49	50	60	49	45	5	13	4	4	1	21	
The New School	NY	1589	695	83	139	142	54	63	47	52	66	5	12	2	4	3	21	
SUNY College at New Paltz	NY	1946	1127	114	179	61	61	72	62	61	68	5	22	3	5	1	32	
SUNY College at Oneonta	NY	2288	1855	69	123	37	55	59	68	51	71	5	30	2	3	1	36	
Alfred University	NY	955	624	41	22	14	64	67	73	61	83	5	11	1	1	0	14	
St Lawrence University	NY	994	669	39	26	15	71	77	14	60	100	5	14	0	1	1	15	

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score							Propensity-Weighted Qualified Candidate Population					
Nazareth College	NY	492	389	21	21	13	71	73	71	64	60	5		8	1	1	0	9	
Siena College	NY	1436	1171	31	47	47	77	81	67	88	76	5		26	1	2	1	30	
CUNY Bernard M Baruch College	NY	4750	1542	324	609	1741	50	57	57	47	63	5		26	9	16	44	95	
SUNY College of Environmental Science and Forestry	NY	915	847	5	23	21	67	71	0	86	75	5		18	0	1	1	20	
Pratt Institute-Main	NY	1203	642	66	111	145	44	48	40	39	46	5		9	1	2	3	16	
University at Buffalo	NY	9589	5742	593	342	912	60	62	59	55	64	5		107	17	10	23	158	
Houghton College	NY	468	415	11	5	4	69	71	50	50	100	5		9	0	0	0	9	
Polytechnic Institute of New York University	NY	1195	321	136	150	352	52	54	40	37	62	5		5	3	3	9	20	
Marist College	NY	1841	1365	73	101	33	78	81	55	79	71	5		33	2	4	1	41	
Clarkson University	NY	1889	1687	43	50	41	69	71	63	64	57	5		36	1	2	1	40	
Syracuse University	NY	5650	3373	384	300	509	79	82	70	77	74	6		91	15	14	17	137	
Hofstra University	NY	3631	2326	287	258	191	48	57	38	48	52	6		44	6	7	4	62	
Wagner College	NY	712	571	54	36	11	63	72	52	44	75	6		14	2	1	0	16	
Albany College of Pharmacy and Health Sciences	NY	452	305	16	6	50	72	68		100	100	6		7	0	0	2	9	
Stony Brook University	NY	7513	2605	434	545	1807	56	55	72	53	68	6		47	17	17	54	136	
Ithaca College	NY	2613	1961	63	111	85	78	78	50	80	81	6		50	2	5	3	61	
Iona College	NY	1511	1030	113	143	27	56	67	49	58	29	6		23	3	5	0	31	
Rochester Institute of Technology	NY	7645	5769	356	304	424	59	63	48	52	63	6		120	9	10	12	151	
Yeshiva University	NY	1592	1473	0	0	0	78	84		50		6		45	0	0	0	45	
United States Merchant Marine Academy	NY	861	750	24	38	40	70	74	50	50	73	6		20	1	1	1	23	
Fordham University	NY	3338	2002	159	353	214	76	80	76	75	75	6		58	7	17	8	90	
Union College	NY	1132	926	41	48	61	81	84	91	74	94	6		28	2	2	3	35	
Skidmore College	NY	1036	681	34	41	90	80	82	83	77	80	7		22	2	2	4	30	
SUNY at Binghamton	NY	5947	2766	243	393	801	76	79	71	69	79	7		85	11	19	33	149	
Bard College	NY	769	470	14	22	17	77	79	68	71	68	7		14	1	1	1	17	
SUNY at Geneseo	NY	2254	1603	50	75	153	73	80	50	56	59	7		54	2	3	5	64	
University of Rochester	NY	2550	1450	97	80	250	82	85	86	77	79	7		52	6	5	11	73	
Rensselaer Polytechnic Institute	NY	3868	2897	134	220	398	81	84	67	72	88	8		110	7	13	21	150	
New York University	NY	7633	3747	206	555	1517	83	85	79	80	90	8		143	12	37	82	274	
Colgate University	NY	1358	1029	77	65	74	92	93	76	83	93	8		46	5	5	4	60	
Hamilton College	NY	883	645	29	41	58	91	93	88	82	78	8		29	2	3	3	37	
Cooper Union for the Advancement of Science and Art	NY	564	247	25	42	114	85	87	78	91	85	8		10	2	3	6	21	
Vassar College	NY	974	738	34	67	68	92	92	93	86	89	8		33	3	5	4	44	
Cornell University	NY	7020	3508	290	381	1152	92	94	88	86	92	9		168	22	31	72	293	
Columbia University in the City of New York	NY	3413	1415	261	354	591	93	92	90	87	96	9		66	20	29	39	154	
Central State University	OH	1012	17	946	6	1	19	0	30		0	1		0	3	0	0	3	
Tiffin University	OH	722	457	123	19	6	40	48	28	0	50	2		3	1	0	0	3	
Wilmington College	OH	559	388	76	4	2	50	54	43	40		2		3	1	0	0	3	

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score						Propensity-Weighted Qualified Candidate Population					
Urbana University	OH	447	269	135	8	0	21	30	22			2	1	1	0	0	0	2
University of Rio Grande	OH	641	453	35	4	3	43	64		0	0	2	3	0	0	0	0	3
Cleveland State University	OH	3147	2157	458	87	105	26	32	12	15	34	3	10	1	0	1	0	13
College of Mount St. Joseph	OH	560	477	40	1	3	41	57	22			3	5	0	0	0	0	5
Walsh University	OH	681	544	51	8	4	46	54	41	100	100	3	5	1	0	0	0	6
Bowling Green State University-Main Campus	OH	6362	5121	606	217	53	53	59	52	40	60	3	54	9	3	1	0	67
Shawnee State University	OH	1410	1184	61	3	6	32	37	13	40	0	3	8	0	0	0	0	8
University of Akron Main Campus	OH	7891	6390	782	89	183	32	40	8	24	53	3	46	2	1	2	0	51
Kent State University Kent Campus	OH	6552	5395	518	110	113	44	51	35	34	60	3	50	5	1	2	0	58
Ashland University	OH	1120	833	165	37	5	54	64	26	67	40	3	10	1	1	0	0	12
Youngstown State University	OH	4656	3473	588	80	45	30	38	12	18	63	3	24	2	0	1	0	27
Wright State University-Main Campus	OH	4839	3689	532	87	139	38	45	29	30	31	3	30	5	1	1	0	36
Ohio Dominican University	OH	688	543	109	20	4	48	52	17	14	50	3	5	1	0	0	0	6
Columbus College of Art and Design	OH	567	420	39	25	21	70	66	43	60	56	4	6	1	1	0	0	7
Heidelberg University	OH	661	513	65	17	3	48	56	14		50	4	6	0	0	0	0	6
Bluffton University	OH	437	363	30	12	1	58	67	39	75		4	5	0	0	0	0	6
The University of Findlay	OH	979	617	50	5	14	51	57	38	36	25	4	7	1	0	0	0	8
Mount Union College	OH	1065	885	73	14	10	59	66	58	0	67	4	12	1	0	0	0	14
Muskingum University	OH	782	678	59	11	5	43	54	32	0	100	4	9	1	0	0	0	10
Malone University	OH	716	633	59	7	2	59	57	17	50	100	4	9	0	0	0	0	9
Otterbein College	OH	870	750	59	18	8	60	68	24	63	57	4	12	1	0	0	0	13
Mount Vernon Nazarene University	OH	730	671	21	7	10	59	57	40	100	0	4	9	0	0	0	0	10
Hiram College	OH	539	344	66	12	5	59	62	69	33	100	4	5	2	0	0	0	7
Capital University	OH	945	792	63	23	12	61	65	51	20	71	4	12	1	0	0	0	14
Ohio University-Main Campus	OH	8070	7259	354	155	79	68	71	54	59	58	4	124	8	4	1	137	
John Carroll University	OH	1476	1176	80	39	27	79	82	52	43	92	4	23	2	1	1	0	26
Marietta College	OH	706	522	35	11	7	57	64	40	50		4	8	1	0	0	0	9
Baldwin-Wallace College	OH	1374	1111	79	34	12	68	75	71	56	63	5	22	3	1	0	0	26
Wittenberg University	OH	811	587	47	12	7	55	65	44	33	50	5	10	1	0	0	0	12
Xavier University	OH	1518	1261	127	50	45	79	80	65	69	79	5	27	4	2	1	0	34
University of Cincinnati-Main Campus	OH	9082	7340	731	127	266	44	50	23	37	56	5	99	8	2	5	114	
Franciscan University of Steubenville	OH	750	634	6	39	13	70	71	0	67	71	5	14	0	1	0	0	15
University of Dayton	OH	3601	3104	117	78	41	70	76	66	60	82	5	71	4	3	1	0	79
Cedarville University	OH	1306	1220	19	23	24	64	67	57	30	56	6	27	1	0	1	0	29
Miami University-Oxford	OH	6705	5702	246	129	172	78	82	67	77	71	6	154	9	6	5	0	175
Ohio Wesleyan University	OH	906	716	42	9	18	56	64	60	50	50	6	15	1	0	0	0	17
Ohio Northern University	OH	1350	1191	66	22	21	73	75	44	50	75	6	29	2	1	1	0	32
The College of Wooster	OH	878	630	51	21	20	66	79	65	75	75	6	18	2	1	1	0	22
Ohio State University-Main Campus	OH	19526	15795	1008	520	1053	70	74	60	67	78	6	421	36	23	39	519	

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score							Propensity-Weighted Qualified Candidate Population						
Denison University	OH	962	802	40	25	21	79	84	65	68	67	7		26	2	1	1	30		
Case Western Reserve University	OH	2416	1437	85	46	388	79	83	69	60	85	7		50	4	2	18	75		
Kenyon College	OH	773	632	29	19	35	85	89	78	78	85	8		25	2	1	2	30		
Oberlin College	OH	1246	950	72	60	76	80	85	82	86	80	8		36	4	4	4	49		
Oklahoma Panhandle State University	OK	531	325	87	60	4	19	24	13	28		1		0	0	0	0	1		
Northwestern Oklahoma State University	OK	637	509	60	26	2	34	37	9	29	0	1		1	0	0	0	1		
Langston University	OK	885	27	826	8	4	9	30	16	0		1		0	1	0	0	1		
East Central University	OK	1251	783	69	38	3	30	36	21	31	50	3		4	0	0	0	5		
Northeastern State University	OK	2257	1201	157	36	19	24	32	17	17	25	3		6	1	0	0	7		
Southeastern Oklahoma State University	OK	1277	728	102	43	7	29	29	30	86	33	3		3	1	1	0	5		
Southwestern Oklahoma State University	OK	1480	1144	117	82	21	33	40	31	28	40	3		7	1	1	0	9		
Oral Roberts University	OK	971	560	148	41	20	56	54	54	44	55	3		5	2	1	0	9		
University of Central Oklahoma	OK	4056	2329	310	125	127	30	35	26	30	42	3		15	2	1	1	20		
Oklahoma Baptist University	OK	595	444	23	19	9	57	61	25	25	50	4		7	0	0	0	7		
Oklahoma Christian University	OK	897	771	38	33	25	41	45	2	25	0	4		8	0	0	0	9		
Oklahoma City University	OK	738	382	82	36	28	43	58	60	25	50	5		6	2	0	1	9		
Oklahoma State University-Main Campus	OK	8031	6202	316	209	137	57	61	47	58	62	5		102	7	6	3	118		
University of Oklahoma Norman Campus	OK	8444	6356	409	318	490	57	63	54	55	72	6		132	12	11	16	170		
University of Tulsa	OK	1510	890	100	62	45	62	65	48	76	40	6		21	3	3	1	28		
Eastern Oregon University	OR	657	494	22	32	26	22	24	50	38	50	3		2	0	0	0	3		
Western Oregon University	OR	1681	1176	68	127	78	32	40	20	51	40	3		7	0	2	1	10		
Southern Oregon University	OR	1422	1091	47	65	72	31	37	20	35	32	3		7	0	1	1	9		
Oregon Institute of Technology	OR	1030	765	7	50	57	41	42	0	38	33	3		6	0	1	0	7		
Portland State University	OR	5893	3708	191	289	558	29	31	33	31	44	4		24	2	3	7	37		
Oregon State University	OR	7571	5379	120	346	702	59	63	43	48	63	4		81	2	7	14	105		
George Fox University	OR	631	481	14	21	30	62	64	0	45	62	5		8	0	0	1	9		
Pacific University	OR	507	297	5	22	126	64	66	100	100	67	5		5	0	1	3	10		
University of Oregon	OR	7933	5918	171	291	542	65	66	64	61	71	5		105	5	9	14	133		
Linfield College	OR	738	525	15	34	57	68	73	40	43	80	5		10	0	1	2	13		
University of Portland	OR	1086	750	19	54	110	69	74	43	78	59	6		18	0	3	3	24		
Willamette University	OR	769	453	21	37	47	72	73	78	44	67	6		12	1	1	2	15		
Lewis & Clark College	OR	771	450	21	36	32	69	75	33	27	78	7		14	0	1	1	17		
Reed College	OR	615	357	19	45	51	74	78	75	100	78	8		13	1	4	3	21		
Lincoln University of Pennsylvania	PA	767	6	703	5	0	36	50	35	0		1		0	2	0	0	2		
Neumann University	PA	713	431	88	17	10	41	52	48	60	40	2		2	1	0	0	3		
Keystone College	PA	561	165	7	6	1	37	43	29	17	0	2		1	0	0	0	1		
Pennsylvania State University-Penn State Schuylkill	PA	418	268	123	15	12	45	53	51	20	33	2		1	1	0	0	2		
Thiel College	PA	562	355	39	6	4	32	36	27	100	100	2		2	0	0	0	2		
Lock Haven University	PA	2022	1727	145	55	25	51	55	39	37	17	2		11	1	0	0	13		

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score						Propensity-Weighted Qualified Candidate Population				
Pennsylvania State University-Penn State Worthington Scranton	PA	566	534	5	18	6	43	39	50	100	100	3	3	0	0	0	4
Pennsylvania State University-Penn State Abington	PA	1411	983	108	79	232	44	49	29	39	54	3	7	1	1	3	11
Pennsylvania State University-Brandywine	PA	827	689	51	18	68	36	37	25	50	34	3	4	0	0	0	5
Edinboro University of Pennsylvania	PA	2391	2064	230	41	22	37	46	32	31	36	3	14	2	0	0	17
Alvernia University	PA	531	445	46	19	8	52	58	32	25	33	3	4	0	0	0	4
Clarion University of Pennsylvania	PA	2126	1901	149	24	10	45	53	37	33	67	3	15	1	0	0	17
Cabrini College	PA	564	459	45	10	9	49	58	34	43	43	3	4	0	0	0	5
Pennsylvania State University-Penn State Hazleton	PA	673	542	56	45	27	58	61	40	43	44	3	5	1	1	0	6
Mansfield University of Pennsylvania	PA	1039	821	77	18	9	36	49	31	50	75	3	6	1	0	0	7
Pennsylvania State University-Penn State York	PA	548	456	30	16	34	47	41	20	25	58	3	3	0	0	0	3
Indiana University of Pennsylvania-Main Campus	PA	4927	3831	546	94	63	43	52	24	49	43	3	30	3	1	1	35
Pennsylvania State University-Penn State Beaver	PA	444	384	30	10	16	43	41	11	0	100	3	2	0	0	0	3
California University of Pennsylvania	PA	3004	2185	190	39	20	45	52	42	13	0	3	17	2	0	0	19
University of Pittsburgh-Bradford	PA	606	493	31	12	22	45	44	43	75	50	3	3	0	0	0	4
Pennsylvania State University-Penn State Berks	PA	1459	1224	88	59	69	54	61	51	42	57	3	11	1	1	1	14
East Stroudsburg University of Pennsylvania	PA	2547	2013	117	136	32	46	54	49	47	59	3	16	1	2	0	20
Shippensburg University of Pennsylvania	PA	3015	2396	236	48	61	60	66	36	34	47	3	28	3	1	1	32
Kutztown University of Pennsylvania	PA	3669	3116	268	161	40	46	56	31	40	75	3	31	2	2	1	37
Slippery Rock University of Pennsylvania	PA	3230	2701	172	41	27	54	61	36	63	63	3	30	2	1	0	33
Widener University-Main Campus	PA	1301	952	116	36	25	48	60	42	27	46	3	10	1	0	0	12
Albright College	PA	936	690	93	30	14	62	68	48	50	73	3	8	1	0	0	11
King's College	PA	1013	841	35	33	10	70	76	47	33	33	3	12	0	0	0	12
University of Pittsburgh-Johnstown	PA	1555	1468	25	10	21	61	62	67	0	71	3	16	1	0	0	17
Robert Morris University	PA	1755	1484	142	30	17	55	63	25	0	50	3	17	1	0	0	18
Seton Hill University	PA	508	393	68	8	1	57	64	28	0	100	3	5	1	0	0	5
Pennsylvania State University-Penn State Altoona	PA	1945	1732	106	47	42	61	66	48	59	62	3	21	2	1	1	24
La Salle University	PA	1335	922	140	57	47	64	71	49	31	65	3	12	2	1	1	15
Delaware Valley College	PA	649	568	33	12	7	42	52	33	17	100	4	6	0	0	0	7
Point Park University	PA	988	821	115	26	7	42	49	44	11	50	4	8	2	0	0	10
Bloomsburg University of Pennsylvania	PA	3178	2523	207	111	27	58	67	51	50	76	4	35	4	2	1	42
Gannon University	PA	947	797	55	15	14	56	66	50	20	33	4	11	1	0	0	12
Waynesburg University	PA	620	558	23	3	4	46	61	13			4	7	0	0	0	7
Philadelphia Biblical University-Langhorne	PA	423	329	48	12	14	48	57	11	100	0	4	4	0	0	0	5
Misericordia University	PA	485	455	7	6	5	67	68	60	40	100	4	6	0	0	0	7
Mercyhurst College	PA	1464	1067	99	33	18	64	75	33	42	75	4	17	1	1	0	19
Marywood University	PA	570	461	14	19	9	61	71	40	43	25	4	7	0	0	0	7
Pennsylvania State University-Penn State Harrisburg	PA	1210	963	79	33	103	86	85	0		75	4	17	0	0	2	19
Eastern University	PA	756	528	130	49	21	59	60	72	50	60	4	7	3	1	0	11
Pennsylvania State University-Penn State Erie-Behrend College	PA	2543	2319	71	55	54	63	66	41	29	58	4	32	1	1	1	35

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score							Propensity-Weighted Qualified Candidate Population					
Wilkes University	PA	1045	868	38	23	18	55	59	22	67	45	4		11	0	1	0	12	
Lycoming College	PA	598	556	21	8	6	67	71	56		75	4		9	0	0	0	10	
Saint Francis University	PA	595	486	51	9	8	50	57	41	71		4		7	1	0	0	8	
Saint Vincent College	PA	873	768	57	17	6	72	75	30	50	60	4		14	1	0	0	15	
West Chester University of Pennsylvania	PA	4032	3518	290	107	86	54	65	54	50	59	4		55	6	2	2	65	
Millersville University of Pennsylvania	PA	2838	2202	207	92	35	58	66	38	41	50	4		35	3	2	1	40	
Philadelphia University	PA	819	630	48	28	30	53	57	57	53	57	4		9	1	1	1	11	
Geneva College	PA	724	647	46	9	7	57	60	29	50	0	4		9	1	0	0	10	
Westminster College	PA	572	460	9	5	4	65	75	63			4		8	0	0	0	9	
University of Pittsburgh-Greensburg	PA	827	714	42	11	29	51	53	31	50	71	4		9	1	0	1	11	
York College Pennsylvania	PA	2133	1897	53	39	39	64	66	43	65	45	4		30	1	1	1	33	
Arcadia University	PA	524	364	42	18	14	73	72	40	64	50	4		6	1	1	0	8	
DeSales University	PA	778	613	14	35	17	64	78	40	43	100	5		13	0	1	1	15	
Lebanon Valley College	PA	726	645	15	17	12	62	69	43	17	17	5		12	0	0	0	13	
Moravian College and Moravian Theological Seminary	PA	667	591	18	28	11	72	79	44	44	20	5		13	0	1	0	14	
Elizabethtown College	PA	643	574	15	14	21	62	71	27	86	63	5		11	0	1	0	12	
Temple University	PA	10671	6702	1145	381	1182	59	63	60	62	59	5		114	31	12	25	182	
Saint Joseph's University	PA	2177	1839	72	84	61	78	80	54	79	78	5		40	2	3	2	46	
Susquehanna University	PA	969	868	43	19	18	80	83	75	67	86	5		19	1	1	1	22	
Duquesne University	PA	2284	1852	97	42	41	69	76	59	59	68	5		38	3	1	1	43	
University of Scranton	PA	1673	1308	17	70	38	77	83	92	71	65	5		29	1	2	1	33	
Washington & Jefferson College	PA	811	680	28	9	9	64	76	25	40	100	5		16	0	0	0	16	
Messiah College	PA	1011	868	18	10	18	70	78	65	82	91	5		20	1	0	1	22	
University of the Sciences in Philadelphia	PA	588	321	24	10	195	61	63	65	64	71	6		7	1	0	6	14	
Juniata College	PA	635	545	10	9	13	80	81	83	100	50	6		15	0	1	0	16	
Pennsylvania State University-Main Campus	PA	20190	16871	677	692	1166	82	87	71	74	82	6		484	26	31	42	584	
Drexel University	PA	6309	4145	308	182	827	62	64	45	48	62	6		88	8	5	23	123	
Allegheny College	PA	919	832	28	21	22	69	76	50	45	56	6		23	1	1	1	25	
Muhlenberg College	PA	973	875	24	36	20	85	86	70	83	75	6		27	1	2	1	31	
Ursinus College	PA	749	545	43	27	32	71	79	61	65	64	6		15	2	1	1	19	
University of Pittsburgh-Pittsburgh Campus	PA	7811	6415	502	91	404	73	78	63	58	75	6		180	19	3	15	217	
Lafayette College	PA	1258	894	73	57	45	88	91	78	69	100	7		32	4	3	2	41	
Dickinson College	PA	1066	836	51	39	37	82	83	82	72	92	7		29	3	2	2	36	
Gettysburg College	PA	1158	966	46	34	18	78	83	74	64	86	7		34	2	2	1	39	
Villanova University	PA	3252	2535	134	209	198	88	89	100	79	92	7		95	9	13	10	127	
Bucknell University	PA	1704	1335	64	49	97	89	88	100	79	88	7		49	4	3	5	62	
Franklin and Marshall College	PA	1025	712	37	33	51	75	79	77	92	62	7		24	2	2	2	30	
Lehigh University	PA	2811	2078	98	113	169	83	86	73	74	83	7		75	5	6	8	94	
Haverford College	PA	548	370	45	39	58	94	95	69	100	93	8		17	2	3	3	26	
Carnegie Mellon University	PA	3379	1384	149	172	792	86	89	77	82	90	8		59	9	12	46	126	

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment				Male Graduation Rate and Mean Test Scale Score							Propensity-Weighted Qualified Candidate Population				
University of Pennsylvania	PA	5078	2181	311	290	828	95	95	90	93	96	9	106	24	25	54	209
Swarthmore College	PA	712	339	50	63	115	91	94	80	88	90	9	16	3	5	7	32
Rhode Island College	RI	1819	1324	96	110	38	40	47	32	35	26	3	9	1	1	0	11
University of Rhode Island	RI	5012	3687	249	240	138	55	61	45	40	41	4	47	4	4	2	56
Salve Regina University	RI	632	500	11	20	7	72	70	75	67	80	5	9	0	1	0	11
Roger Williams University	RI	1901	1418	16	37	28	52	57	70	37	28	5	22	1	1	0	23
Bryant University	RI	1909	1608	51	65	54	65	70	48	76	68	5	34	1	3	1	39
Providence College	RI	1698	1345	36	53	40	85	86	73	84	80	6	38	1	3	1	44
Rhode Island School of Design	RI	614	265	21	35	60	87	88	82	87	93	6	8	1	2	3	14
Brown University	RI	2833	1436	171	204	376	92	95	90	90	95	9	70	13	17	24	124
Benedict College	SC	1411	2	1382	13	0	20		30			1	0	4	0	0	4
South Carolina State University	SC	1701	23	1660	6	4	34	50	45			1	0	7	0	0	8
Claflin University	SC	509	8	467	3	1	50	33	48			2	0	4	0	0	5
Francis Marion University	SC	1042	607	356	9	7	36	35	46	50	100	3	3	4	0	0	8
University of South Carolina-Beaufort	SC	435	339	39	13	5	12	18	31	25	0	3	1	0	0	0	1
Newberry College	SC	558	345	169	15	3	29	44	31	25	0	3	3	2	0	0	4
Southern Wesleyan University	SC	591	404	121	12	4	37	46	38	50		3	3	1	0	0	5
Limestone College	SC	824	503	279	17	7	34	35	34	13	0	3	3	3	0	0	6
University of South Carolina-Upstate	SC	1466	877	274	26	43	25	35	42	20	38	3	6	3	0	0	10
Lander University	SC	808	543	172	10	8	31	43	45	25	100	3	4	2	0	0	7
University of South Carolina-Aiken	SC	794	539	155	18	8	32	43	28	57	20	3	4	1	0	0	6
Charleston Southern University	SC	908	517	269	15	9	33	45	46	50	50	4	5	4	0	0	10
Anderson University	SC	561	443	60	14	9	39	46	37	25	0	4	4	1	0	0	5
Coastal Carolina University	SC	3281	2653	432	68	46	45	45	55	64	38	4	25	8	2	0	36
Winthrop University	SC	1421	977	333	25	14	52	58	62	36	60	4	12	7	0	0	20
Citadel Military College of South Carolina	SC	2036	1719	139	77	55	68	70	67	63	56	4	29	4	2	1	36
Presbyterian College	SC	587	498	63	4	3	68	72	69	100	100	5	11	2	0	0	13
North Greenville University	SC	892	705	78	8	2	39	51	36	67	0	5	11	1	0	0	12
University of South Carolina-Columbia	SC	8235	6113	798	172	240	63	68	65	74	66	6	137	29	8	7	180
College of Charleston	SC	3244	2784	107	63	54	62	65	58	50	77	6	60	3	2	2	67
Wofford College	SC	713	616	47	11	18	79	83	84	100	67	6	17	2	1	1	20
Clemson University	SC	7393	6032	495	86	133	76	81	68	80	75	6	176	20	5	5	205
Furman University	SC	1149	936	89	21	19	81	85	91	82	82	7	31	5	1	1	38
Black Hills State University	SD	963	815	11	20	11	28	33	0	50	0	3	4	0	0	0	4
Dakota State University	SD	601	508	21	8	8	44	47	0	0		3	4	0	0	0	4
Northern State University	SD	758	548	25	7	14	36	44	50	33	0	3	4	0	0	0	5
South Dakota State University	SD	4335	3827	50	25	32	49	52	30	13	75	4	42	1	0	1	43
University of Sioux Falls	SD	490	455	20	8	2	45	50	0	100	100	4	5	0	0	0	6
University of South Dakota	SD	1848	1530	52	26	23	46	51	13	25	43	5	21	0	0	0	22
Augustana College	SD	583	534	17	3	8	72	68	67	0	100	5	10	1	0	0	11
South Dakota School of Mines and Technology	SD	1083	956	6	12	13	41	38	0	25	60	6	12	0	0	0	13

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score							Propensity-Weighted Qualified Candidate Population						
Lane College	TN	946	0	944	1	0	26		32				1	0	3	0	0	3		
Bethel University	TN	716	421	193	8	2	17	32	21	0	0	18	2	1	1	0	0	2		
Tennessee State University	TN	1916	204	1638	17	21	27	26	37	40	18		2	0	9	0	0	10		
Tusculum College	TN	784	580	146	14	7	28	39	33	25			3	3	1	0	0	5		
Cumberland University	TN	436	298	74	10	5	26	42	27	50	50	50	3	2	0	0	0	3		
Austin Peay State University	TN	2429	1577	386	88	56	27	35	23	16	24	24	3	8	2	0	0	11		
The University of Tennessee at Chattanooga	TN	3213	2553	477	72	77	33	41	38	50	52	52	3	16	5	1	1	22		
East Tennessee State University	TN	4041	3512	165	63	73	35	42	33	20	56	56	3	27	2	0	1	30		
King College	TN	446	271	15	9	2	54	53	60	100	0	0	3	3	0	0	0	3		
Middle Tennessee State University	TN	8784	7039	1142	196	233	41	45	44	37	39	39	4	67	18	3	3	89		
Southern Adventist University	TN	955	590	103	149	49	52	60	41	47	56	56	4	7	1	3	1	12		
Carson-Newman College	TN	732	556	104	10	2	45	54	39	0	33	33	4	6	1	0	0	8		
The University of Tennessee-Martin	TN	2462	2014	313	25	16	48	52	37	27	33	33	4	22	4	0	0	26		
Lee University	TN	1459	1133	68	47	16	45	53	53	32	50	50	4	14	1	1	0	17		
University of Memphis	TN	4657	2988	1272	93	169	34	41	30	40	48	48	4	29	15	2	3	49		
Trevecca Nazarene University	TN	504	431	34	13	9	52	51	13	100	100	100	4	5	0	1	0	6		
Christian Brothers University	TN	574	368	94	19	34	62	62	46	71	71	71	5	6	2	1	1	10		
Maryville College	TN	490	421	31	10	0	50	54	33	33	33	33	5	6	0	0	0	7		
Freed-Hardeman University	TN	632	563	32	15	4	50	55	39	0		5	5	8	1	0	0	9		
Lipscomb University	TN	970	834	36	22	20	66	66	53	78	20	20	5	15	1	1	0	17		
Tennessee Technological University	TN	4005	3195	171	50	61	43	48	32	38	47	47	5	41	2	1	1	46		
Bryan College	TN	451	397	22	9	3	47	58	33	0	0	0	5	6	0	0	0	7		
Union University	TN	793	686	40	12	10	60	61	29	25	75	75	5	13	1	0	0	14		
The University of Tennessee	TN	10189	8822	677	170	282	56	60	58	53	59	59	5	159	20	5	7	190		
Belmont University	TN	1648	1443	39	32	35	63	66	74	100	67	67	5	29	1	2	1	33		
Sewanee-The University of the South	TN	690	614	29	16	15	74	78	65	57	80	80	7	19	1	1	1	21		
Rhodes College	TN	701	560	41	17	35	71	74	61	0	64	64	7	16	2	0	1	19		
Vanderbilt University	TN	3148	1902	210	165	235	88	90	84	85	91	91	9	87	15	13	15	130		
Texas Southern University	TX	2479	23	2205	91	57	9	10	12	17	25	25	1	0	3	0	0	3		
Prairie View A & M University	TX	2460	61	2222	84	30	31	32	37	28	0	0	1	0	8	0	0	9		
Texas A & M International University	TX	1159	37	18	1048	4	35	13	0	41	0	0	2	0	0	7	0	7		
Sul Ross State University	TX	629	236	75	306	4	12	15	14	20	0	0	2	0	0	1	0	1		
Texas A & M University-Kingsville	TX	2113	618	168	1222	34	24	27	24	28	13	13	2	2	1	6	0	8		
Lamar University	TX	2645	1535	646	205	106	31	36	25	24	14	14	2	7	3	1	0	11		
The University of Texas at El Paso	TX	5189	475	209	3739	71	27	30	27	31	63	63	2	2	1	25	1	29		
The University of Texas-Pan American	TX	4760	239	41	4080	63	32	31		36	50	50	2	1	0	32	1	34		
Texas A & M University-Commerce	TX	1395	907	297	124	27	29	35	41	35	38	38	3	5	3	1	0	9		
Wayland Baptist University	TX	451	272	44	85	6	37	53	0	17	100	100	3	2	0	0	0	3		

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment				Male Graduation Rate and Mean Test Scale Score						Propensity-Weighted Qualified Candidate Population					
Angelo State University	TX	2238	1430	222	521	24	30	35	18	28	43	3	8	1	4	0	13
McMurry University	TX	613	359	125	96	6	34	44	22	23	50	3	2	1	1	0	4
University of the Incarnate Word	TX	1122	288	66	612	35	39	40	31	41	55	3	2	1	7	0	10
The University of Texas of the Permian Basin	TX	751	393	48	276	15	22	31	0	34	0	3	2	0	3	0	4
Tarleton State University	TX	2562	2098	163	213	27	35	41	27	26	50	3	13	1	2	0	16
East Texas Baptist University	TX	542	359	128	36	4	31	43	13	54		3	2	0	1	0	3
Lubbock Christian University	TX	551	442	27	74	0	36	49	17	26	100	3	4	0	1	0	5
Stephen F Austin State University	TX	3635	2418	745	345	55	34	40	37	35	33	3	17	8	4	0	30
Howard Payne University	TX	532	371	45	72	6	30	47	8	35	25	3	3	0	1	0	4
Concordia University Texas	TX	405	266	50	55	3	35	37	33	29	0	3	2	0	1	0	3
Midwestern State University	TX	1708	1074	261	153	67	26	33	24	25	26	3	6	2	1	0	10
West Texas A & M University	TX	2139	1479	157	404	38	29	43	26	33	18	3	11	1	4	0	17
Sam Houston State University	TX	5277	3810	698	595	78	15	22	19	21	27	3	15	4	4	1	24
Texas Lutheran University	TX	663	406	86	132	11	41	55	42	41	67	3	4	1	2	0	7
The University of Texas at San Antonio	TX	9521	3816	702	3910	774	25	26	30	29	28	3	18	6	37	5	67
University of Mary Hardin-Baylor	TX	846	552	124	112	12	32	45	22	36	29	4	5	1	2	0	8
Hardin-Simmons University	TX	743	526	58	83	8	43	53	18	34	67	4	6	0	1	0	7
St Marys University	TX	869	177	37	559	24	53	61	60	58	72	4	3	1	14	1	18
University of Houston	TX	9978	3460	1308	2044	2422	38	39	33	41	50	4	32	17	37	39	125
Texas State University-San Marcos	TX	9175	6313	489	2009	183	48	55	60	51	47	4	83	12	45	3	143
Dallas Baptist University	TX	983	648	85	92	29	43	54	30	40	0	4	8	1	2	0	11
The University of Texas at Tyler	TX	1630	1282	128	115	45	27	31	56	26	33	4	10	3	1	0	14
The University of Texas at Arlington	TX	6443	3246	725	1029	933	32	34	38	34	40	4	26	11	15	12	65
Texas A & M University at Galveston	TX	856	711	23	86	18	30	32	57	32	33	4	5	1	1	0	7
Houston Baptist University	TX	674	262	109	120	106	41	49	27	40	55	4	3	1	2	2	8
University of North Texas	TX	9763	6442	1152	1152	556	37	47	39	43	50	5	82	20	25	10	136
Abilene Christian University	TX	1677	1284	186	82	24	51	63	31	46	55	5	22	3	2	0	27
Texas Tech University	TX	11814	8967	544	1609	401	56	59	42	50	51	5	143	10	40	7	200
University of St Thomas	TX	488	169	18	154	58	41	43	54	53	46	5	2	0	4	1	7
Saint Edward's University	TX	1373	753	60	394	32	57	60	67	66	50	5	14	2	14	1	31
Texas Christian University	TX	2911	2156	159	214	79	68	71	61	53	59	5	46	5	6	2	59
Texas A & M University	TX	18325	13888	551	2441	915	73	80	63	71	77	6	367	19	105	31	522
LeTourneau University	TX	1387	1114	107	81	12	41	45	13	18	50	6	17	1	1	0	18
Baylor University	TX	4941	3551	313	501	345	71	74	62	67	74	6	87	11	20	11	129
University of Dallas	TX	611	414	5	92	31	54	60	25	50	61	6	9	0	3	1	13

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score						Propensity-Weighted Qualified Candidate Population					
Southwestern University	TX	493	375	11	72	21	71	73	79	81	89	6	10	1	4	1	15	
The University of Texas at Austin	TX	16520	8931	639	2952	3061	74	80	67	69	81	6	257	26	134	119	536	
Austin College	TX	563	406	16	49	78	73	79	77	71	78	6	12	1	2	3	18	
Southern Methodist University	TX	2762	2018	148	209	144	72	75	60	73	80	6	54	5	10	6	75	
The University of Texas at Dallas	TX	3885	2215	232	387	843	55	58	51	52	68	7	50	8	14	30	102	
Trinity University	TX	1134	697	46	100	66	77	82	88	77	77	7	24	3	6	3	36	
Rice University	TX	1603	814	111	189	304	91	92	94	94	97	9	38	9	17	20	84	
Southern Utah University	UT	2239	1924	43	76	65	34	40	0	10	0	3	14	0	0	0	14	
Weber State University	UT	4840	3146	69	204	149	39	43	10	19	38	4	28	0	1	2	32	
Utah State University	UT	5644	4701	80	136	92	52	54	75	50	43	5	69	3	3	1	76	
University of Utah	UT	8026	6402	91	347	468	49	50	33	44	63	5	86	1	8	11	106	
Westminster College	UT	848	636	14	45	25	58	59	0	70	38	5	10	0	2	0	12	
Brigham Young University	UT	14195	12354	65	566	587	81	80	50	69	76	6	356	2	26	21	405	
Norfolk State University	VA	1840	64	1640	29	12	26	29	32	25	0	2	0	8	0	0	8	
Virginia State University	VA	1621	27	1524	0	5	35	33	40	17	33	2	0	9	0	0	9	
Ferrum College	VA	735	387	211	22	4	24	39	10	17	0	2	1	0	0	0	2	
Averett University	VA	409	219	140	19	4	39	46	40	100	100	2	1	1	0	0	3	
The University of Virginia's College at Wise	VA	738	603	95	22	9	42	48	27	75	43	3	4	1	0	0	6	
Liberty University	VA	6731	4534	699	202	110	39	49	18	32	42	3	33	3	2	1	39	
Marymount University	VA	505	225	60	55	34	37	48	49	51	41	3	2	1	1	0	4	
Shenandoah University	VA	707	320	87	16	18	41	50	32	31	80	3	3	1	0	0	4	
Virginia Wesleyan College	VA	465	331	88	20	3	37	46	41	14	20	3	3	1	0	0	4	
Radford University	VA	3341	2868	179	105	93	56	60	61	55	40	3	31	3	2	1	37	
Emory and Henry College	VA	484	402	44	3	7	51	57	36	0	100	3	4	0	0	0	5	
Lynchburg College	VA	828	648	45	23	15	52	59	50	71	57	4	8	1	1	0	10	
Bridgewater College	VA	623	461	70	12	3	55	59	59	40	50	4	6	1	0	0	7	
Hampton University	VA	1555	19	1496	13	5	40	0	52	33	0	4	0	31	0	0	31	
Old Dominion University	VA	5855	3705	1064	239	382	44	45	56	44	52	4	40	24	5	6	75	
Longwood University	VA	1319	1107	67	27	32	58	66	53	74	63	4	18	1	1	1	20	
Virginia Commonwealth University	VA	7830	4339	1129	282	1006	44	49	46	49	57	4	51	21	6	18	96	
Randolph-Macon College	VA	553	440	77	11	4	55	64	77	71	50	4	7	2	0	0	10	
Roanoke College	VA	857	775	20	26	8	60	62	50	27	67	5	13	0	0	0	14	
George Mason University	VA	6531	2863	408	333	1101	57	59	66	61	66	5	46	12	10	26	94	
Christopher Newport University	VA	2062	1688	177	55	54	49	49	60	38	42	5	22	5	1	1	29	
Hampden-Sydney College	VA	1119	970	48	14	14	62	62	58	100	67	5	16	1	1	0	19	
Virginia Military Institute	VA	1317	1119	72	50	50	75	75	68	60	75	5	25	2	2	2	31	
James Madison University	VA	6477	5219	243	166	335	79	83	66	71	85	5	130	8	6	11	156	
University of Mary Washington	VA	1232	799	33	50	48	82	78	74	88	67	6	21	1	3	1	26	
Virginia Polytechnic Institute and State University	VA	13189	9627	527	343	1009	75	80	67	82	79	6	254	19	17	35	326	
University of Richmond	VA	1388	962	73	33	38	87	87	79	79	94	7	33	4	2	2	40	
University of Virginia-Main Campus	VA	6278	4052	425	269	689	91	95	85	89	94	8	173	27	20	39	259	
College of William and Mary	VA	2623	1603	151	126	217	89	92	89	81	91	8	66	10	8	12	97	

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

			Full-time Male Enrollment				Male Graduation Rate and Mean Test Scale Score						Propensity-Weighted Qualified Candidate Population				
Washington and Lee University	VA	880	781	26	12	21	87	89	86	100	80	9	35	2	1	1	40
Johnson State College	VT	493	424	16	7	3	30	33	100	33	33	2	2	0	0	0	2
Lyndon State College	VT	665	604	17	12	9	25	35	0	0		3	3	0	0	0	3
Castleton State College	VT	827	740	8	15	5	41	43	33	80	67	3	5	0	0	0	5
Norwich University	VT	1374	1115	46	66	36	49	54	23	29	57	4	13	0	1	1	14
Champlain College	VT	1236	784	16	21	27	69	74		100	100	5	16	0	1	1	18
Saint Michael's College	VT	933	866	12	8	18	82	83	80	43	67	5	22	0	0	0	23
University of Vermont	VT	4343	4026	49	71	89	67	72	65	56	84	6	96	2	2	3	103
Middlebury College	VT	1197	814	36	64	86	92	93	79	85	95	8	36	2	5	5	49
Eastern Washington University	WA	3671	2290	196	312	155	44	49	41	50	38	3	17	2	4	1	24
Saint Martin's University	WA	460	301	32	22	41	51	59	43	43	67	3	3	0	0	1	5
Central Washington University	WA	4274	3214	126	275	178	53	57	21	50	48	3	33	1	5	2	40
Walla Walla University	WA	768	603	37	61	46	55	53	43	47	57	4	8	1	1	1	10
Washington State University	WA	8953	6694	224	439	586	64	68	53	57	62	5	123	5	12	13	154
Western Washington University	WA	5510	4200	181	228	512	67	69	48	60	73	5	78	4	7	13	102
Pacific Lutheran University	WA	1188	804	29	27	69	66	74	27	50	58	5	16	0	1	1	19
The Evergreen State College	WA	1800	1275	57	81	53	64	66	64	64	47	5	25	2	3	1	31
Seattle University	WA	1533	748	78	110	298	70	69	87	74	73	5	15	3	4	9	32
Seattle Pacific University	WA	922	722	18	12	70	64	67	11	45	50	5	15	0	0	1	16
Gonzaga University	WA	2039	1566	33	80	108	79	82	67	76	77	6	42	1	4	4	51
University of Washington-Seattle Campus	WA	12056	6373	384	640	3226	75	78	68	67	79	6	164	14	26	112	316
Whitworth University	WA	943	763	54	28	42	70	79	75	46	74	6	20	2	1	1	24
DigiPen Institute of Technology	WA	726	492	9	42	52	69					6	0	0	0	0	0
University of Puget Sound	WA	1069	789	36	39	96	73	77	77	73	84	6	22	2	2	4	29
Whitman College	WA	630	421	18	31	52	93	93	67	80	96	7	16	1	2	3	22
Lakeland College	WI	547	396	46	16	14	37	50	21	33	60	2	2	0	0	0	2
University of Wisconsin-Parkside	WI	1722	1300	152	128	51	28	33	17	33	38	3	6	1	1	0	9
Cardinal Stritch University	WI	959	665	123	42	24	50	69	52	31	17	3	8	2	0	0	11
University of Wisconsin-Stout	WI	3470	3186	44	31	79	49	53	50	50	38	3	30	1	1	1	32
University of Wisconsin-Milwaukee	WI	9789	7954	493	394	504	40	46	17	30	24	3	66	3	4	3	75
Edgewood College	WI	481	403	20	18	5	42	48	33	67	50	4	4	0	0	0	5
University of Wisconsin-Superior	WI	883	737	18	6	12	31	36	0	33	20	4	6	0	0	0	6
Viterbo University	WI	459	402	11	11	10	42	45	40	50	71	4	4	0	0	0	4
University of Wisconsin-Oshkosh	WI	3685	3316	67	80	114	44	48	24	24	54	4	33	1	1	2	36
University of Wisconsin-River Falls	WI	2329	2093	48	37	60	50	57	31	64	28	4	25	1	1	0	27
University of Wisconsin-Platteville	WI	3834	3574	66	33	49	52	56	33	30	21	4	42	1	0	0	43
University of Wisconsin-Green Bay	WI	1737	1553	19	30	63	54	56	45	50	43	4	18	0	1	1	20
Carroll University	WI	819	623	23	32	19	42	57	13	86	25	4	9	0	1	0	10
Concordia University-Wisconsin	WI	795	559	66	16	6	52	65	26	38	50	4	9	1	0	0	10
University of Wisconsin-Stevens Point	WI	3817	3455	64	47	89	59	60	60	58	59	4	50	2	1	2	54
Ripon College	WI	500	421	9	17	6	65	72	67	50	67	5	8	0	0	0	9
University of Wisconsin-Whitewater	WI	4543	4031	195	98	102	52	57	33	41	56	5	62	3	2	2	69
Carthage College	WI	1112	902	35	52	18	53	58	55	79	42	5	14	1	2	0	17
Saint Norbert College	WI	895	806	4	13	9	69	77	33	50	40	5	17	0	0	0	17
University of Wisconsin-Eau Claire	WI	4046	3694	23	47	115	59	61	50	23	50	5	61	1	1	2	64

Table 16. Propensity-Weighted Qualified Candidate Population (PW-QCP), by Institution, Academic Year 2007–08 (Continued)

		Full-time Male Enrollment					Male Graduation Rate and Mean Test Scale Score						Propensity-Weighted Qualified Candidate Population					
University of Wisconsin-La Crosse	WI	3434	2972	53	58	135	64	67	44	33	37	5	54	1	1	2	58	
Marquette University	WI	3549	2957	143	191	145	75	79	63	66	63	6	77	5	8	4	94	
Milwaukee School of Engineering	WI	1784	1488	44	40	53	54	55	64	45	60	6	29	2	1	2	34	
Beloit College	WI	568	442	21	21	13	79	79	63	0	100	7	14	1	0	1	15	
University of Wisconsin-Madison	WI	13206	10318	316	459	727	79	83	60	77	75	7	334	12	25	28	400	
West Virginia State University	WV	933	607	237	10	3	23	29	29	50	0	1	1	1	0	0	2	
Glenville State College	WV	588	460	111	8	4	21	20	20	100		1	1	0	0	0	1	
West Liberty University	WV	937	836	60	8	4	33	49	15	75	0	2	4	0	0	0	4	
West Virginia University Institute of Technology	WV	581	461	81	8	3	32	35	6	0	50	2	1	0	0	0	2	
Concord University	WV	1037	916	98	9	12	29	33	21	0	25	2	4	0	0	0	4	
Bluefield State College	WV	628	508	66	5	4	5	6	5	0		2	0	0	0	0	0	
Fairmont State University	WV	1647	1463	88	16	44	43	48	33	67		3	11	1	0	0	12	
West Virginia Wesleyan College	WV	556	293	24	5	2	57	62	36	29	20	3	3	0	0	0	3	
University of Charleston	WV	454	245	43	6	3	41	50	38		0	3	2	0	0	0	3	
Shepherd University	WV	1346	1128	100	34	26	30	40	17	23	38	3	8	1	0	0	9	
Marshall University	WV	3451	2973	246	47	40	38	45	42	21	64	3	24	3	0	1	28	
West Virginia University	WV	11455	10161	387	230	223	52	57	46	51	58	4	139	7	5	4	155	
University of Wyoming	WY	3930	3205	52	114	56	47	53	33	44	38	5	46	1	2	1	50	
		2735379	1822186	240335	195730	201220	52	57	44	49	54	4	32298	4034	5084	5789	47205	

Table 17. Percent Propensity-Weighted Qualified Candidate Population (PW-QCP), by State, Academic Year 2007–08

State	Schools	White	Black	Hispanic	Asian	Other
AK	2	66.7	3.7	3.7	7.4	0.1
AL	22	73.4	16.5	2.4	2.2	1.2
AR	12	73.8	9.7	4.0	2.5	0.6
AZ	5	58.2	4.0	19.0	6.7	1.2
CA	61	32.5	4.0	19.1	30.3	10.8
CO	15	68.5	2.9	10.0	5.7	1.6
CT	18	55.2	7.7	8.6	7.8	1.6
DC	6	50.1	12.9	7.5	8.4	0.9
DE	3	73.3	9.1	8.0	5.7	0.3
FL	28	51.0	10.9	23.0	6.5	4.3
GA	25	57.4	19.4	5.2	11.6	2.4
HI	5	17.7	2.4	2.4	63.7	0.2
IA	22	78.8	3.3	3.6	3.5	1.4
ID	4	82.2	0.5	6.7	2.4	0.4
IL	39	59.3	6.4	8.8	12.6	4.2
IN	38	73.9	5.6	5.3	5.1	3.0
KS	10	76.4	3.5	5.1	3.1	0.8
KY	20	80.8	8.3	2.4	2.4	0.8
LA	16	68.6	13.5	5.2	3.4	1.0
MA	45	53.3	6.1	8.0	10.3	4.7
MD	18	53.9	16.0	6.5	14.5	2.1
ME	9	78.6	4.4	4.9	6.3	0.4
MI	33	69.7	5.9	4.2	7.0	3.6
MN	26	75.6	3.9	2.9	6.3	1.9
MO	31	70.0	7.7	4.1	5.2	2.1
MS	11	67.5	25.1	1.7	1.4	0.5
MT	7	80.5	0.0	2.0	1.3	0.3
NC	38	65.7	14.4	4.9	7.4	3.1
ND	5	89.4	3.1	0.6	1.3	0.3
NE	9	77.3	2.7	5.1	4.0	0.7
NH	8	65.5	4.5	5.2	7.0	0.6
NJ	24	49.8	9.2	13.4	16.9	2.4
NM	5	35.5	3.3	44.8	2.7	0.3
NV	2	48.1	5.3	13.5	15.8	0.2
NY	87	50.0	6.8	9.2	12.5	8.7
OH	46	76.5	6.6	3.2	4.5	3.8
OK	15	64.9	6.7	5.1	4.5	0.9
OR	14	61.0	2.7	6.6	9.7	1.0
PA	87	68.4	6.5	4.9	7.9	6.5
RI	8	57.2	5.3	7.5	7.7	0.8
SC	23	70.0	15.5	2.8	2.3	1.4
SD	8	87.3	1.7	0.8	1.7	0.2
TN	28	70.6	12.7	3.9	4.0	1.6
TX	52	52.3	7.4	22.9	10.6	5.5
UT	6	78.7	0.8	5.6	4.9	1.3
VA	30	62.0	12.0	5.3	9.4	3.1
VT	8	80.6	2.1	4.2	4.6	0.4
WA	16	58.2	3.8	7.0	16.4	1.9
WI	25	82.2	3.0	4.4	4.3	2.2
WV	12	85.3	6.1	2.6	2.2	0.4
WY	1	75.4	1.6	3.3	1.6	0.1
ALL	1088	60	7	9	11	100

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